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Guest Editorial

Cancer and the Physician

INFORMATION available to the public concerning cancer is now being widely disseminated. The American Cancer Society, Inc., and its affiliated state organizations, through various publicity channels, are stressing constantly the pre-cancerous and early-cancer symptoms of the discoverable types of the disease. These worthy endeavors are complemented by the educational efforts of the U. S. Public Health Service, state health departments, medical societies, insurance companies, and other organizations interested in public health and preventive and curative medicine. And magazines of national circulation are rendering excellent service through the publication of articles dealing with cancer.

Physicians have realized for some time that even intensified health educational activities are effective only up to a certain point. Short items on personal and public health problems, if popularized, will command a fair proportion of the interest of regular readers of newspapers; radio script prepared at the listener's level, if garnished with human interest, also holds a certain number of listeners; magazine articles attract many persons; health motion pictures, though still limited in circulation, when developed in the Hollywood manner, are attracting increasing audiences; and even pamphlets on health subjects are gaining in popularity, especially among the academic groups.

However, without in the least discounting such efforts, the most effective influence rests in the hands of the family doctor.

There is a large group with only superficial knowledge or information about cancer who develop an undue fear of the disease. Vaguely or often definitely aware that suspicious symptoms exist, they dread the likely diagnosis and deliberately avoid the doctor's office until the disease has progressed beyond help.

It is sufficiently tragic that approximately two-thirds of the cancer cases give slight, if any, warning until the condition is far advanced, frequently irremediably so. When to this present hopelessness is added the fatality of many victims whose lives could be saved were scientific steps promptly taken, the situation is pathetically ironical. It is at this point that the family physician can render an incalculable service if he be alert and zealous in his history taking and examinations.

It is quite true that the traditions of the profession, the interpretation of ethical practice, and an inherent reticence to avoid the appearance of "drumming up trade" represent retarding influences. Nevertheless, the practicing physician fails in his duty toward his patients when he limits his activities to the specific illness at hand. Curative medicine, naturally will represent the primary function of the medical practitioner.

In 1944, *2,491* deaths for cancer were registered in Virginia. In its early stage most cancer is curable. At least 60 per cent of all cancers should be cured. Probably

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not more than 15 or 20 per cent is being cured in Virginia today. This, no doubt, means that full advantage is not being taken of present medical knowledge on the subject. It is well known that facilities for cancer diagnosis are not easily available to all the people in our State. Many of our physicians do not have the necessary hospitals available for the proper examination of their patients, as many of the examinations required in the early diagnosis of cancer cannot be successfully made in the physician's office.

To augment the diagnostic services now available at the eight cancer clinics in Virginia, consideration might well be given by the profession to the establishment of additional facilities such as mobile services with cancer specialists, laboratory technician, portable x-ray and other equipment necessary to make a complete diagnosis to supplement the diagnostic service already set up.

Through this procedure it would be possible to offer Virginia physicians an opportunity to learn more about cancer, to obtain consultation without sending their patients a long distance and in the long run benefit the individual citizen who will be more apt to seek medical advice if it is close at hand.

As previously intimated, it may be a bit embarrassing for the family doctor to suggest the need of the periodic physical examination to those of his patients (decidedly in the majority) who come to him for help for a specific condition, and want nothing else. Nevertheless, he should overcome his reserve in this vital discharge of a duty to those who have placed their trust in his professional judgment and skill.

Were practicing physicians more alive to their obligations in this respect, the one weak link in the preventive and curative medicine chain would be immeasurably strengthened. Conceivably, such an attitude universally adopted by all practicing physicians could reduce not only the deaths from early discoverable cancer, but could effect a reduction from other conditions as well.

I. C. RIGGIN, M.D.,
State Health Commissioner.

Floral Eponym (26)

DIOSCOREA

PEDACIUS DIOSCORIDES

A LARGE genus of chiefly herbaceous twining vines of the family Dioscoreaceae. Most of them are tropical and a few are cultivated for food or ornament. D.*batatas*, sometimes called cinnamon vine, Chinese yam or potato, is grown in the tropics for its edible tubers. When we speak of yams we in Virginia have in mind the sweet potato *(Ipomoea batatas)* which is an entirely different family, really a morning glory.

Dioscorides, the originator of the materia medica, was a Greek army surgeon in the service of Nero. He used his opportunities of travel for the study of plants. He described about 600 plants and plant-principles. His descriptions were followed "word by word" for sixteen centuries and his book has been more attentively studied by learned men than any other botanical work, with the possible exception of Bauhin's *Pinax*. Dioscorides has a place in the history of anesthesia because he recommended Mandragora wine for the relief of pain in surgical operations and cauterizations.

CONGENITAL PYLORIC STENOSIS*

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and
JAMES B. STONE, M.D.,
Johnston-Willis Hospital,
Richmond, Virginia.

Certain surgical problems, when solved, attract appreciative attention. Congenital pyloric stenosis is one of these. When it occurs in a first male child, it seems a calamity of alarming proportions to the infant's immediate family. But happily today this condition presents an old surgical problem which, by proper technique, has been lately and competently solved. This fact is fortunate, for hypertrophic pyloric stenosis is not an uncommon condition in the newborn. It is one of the most frequently encountered surgical conditions of early infancy. An indication of this frequency is seen in the series reported by Lanman and Mahoney,[2] of 425 cases treated surgically at the Children's Hospital, Boston, between 1915 and 1932; also in Williams' more recent report of 400 cases admitted to the Children's Hospital in Melbourne, Australia, between 1928 and 1941.

It is nearly three hundred years since the first recorded discussion of congenital pyloric stenosis. Hildanus, a German pediatrician, published this in 1646. In 1717 Blair reported a case; Charles Weber recognized one in 1758; and Armstrong[1] described a typical but fatal case in London in 1777. The first American physician to recognize this condition was Dr. Hezekiah Beardsley who, in 1788, reported his case before the Medical Society of New Haven. Both he and Armstrong claimed successful treatment. But we note with interest the long interval that elapsed between the recognition of pyloric stenosis and the adoption of its properly standardized treatment.

Prior to 1908 the surgical treatment for this condition carried a high mortality. Fifty to seventy-five per cent mortality[1,5] was the gloomy prognosis, but the development of the Fredet-Ramstedt operation proved a turning-point in this chapter of surgical history. This procedure in the hands of a skilful surgeon, plus today's prompt diagnosis on the part of trained pediatricians, with vigilant postoperative nursing and nutritional care have lowered the mortality of congenital pyloric stenosis to almost nil.

Approximately 75 to 80 per cent of these cases occur in boys. In some series, this ratio is as high as ten-to-one. More than one case has been reported in the same family, and it has also occurred in twins, which facts support the view that there may be a familial tendency. However, although numerous theories have been advanced as to the etiology of the condition, none has yet proved conclusive. Its incidence has no relation to the type of food taken. A large proportion of cases of pyloric stenosis are breast-fed.

Pathologically the condition is essentially one of hyperplasia and hypertrophy of the pyloric musculature, especially of the circular fibres. Authorities are inclined to agree on the presence of a congenital hypertrophy with a superimposed spasm contributing to the obstruction.[4]

Symptoms may be present from birth; but the onset is usually between the second and tenth week, more often before the end of the second month. The spitting-up or vomiting of food during the early weeks of life is not uncommon; its occasional occurrence is no cause for alarm. But persistent vomiting by a young infant in the absence of infection, fever, diarrhea, or obvious gross feeding errors immediately suggests pyloric stenosis. Such vomiting should at once arouse suspicion that more than a simple functional disorder now exists. If it was at first occasional, but has become progressively more frequent and forceful, until it is now definitely projectile, we have the most characteristic symptom of pyloric stenosis. Other important indications to the diagnosis are: visible gastric peristalsis, seen more readily during or just after feeding; constipation of a progressive character, owing to very little food passing the pyloric obstruction; failure to gain or actual loss of weight; finally, the presence of a palpable pyloric tumor.

Considerable dexterity and experience are needed to palpate even an enlarged pylorus with certainty.

*Read before the annual meeting of the Medical Society of Virginia at Richmond, October 23-25, 1944.

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If the tumor is palpable, it is a most important finding, and is positive evidence of the stenosis; but failure to palpate the tumor is not conclusive proof to the contrary, and such failure should not obscure the diagnosis.

In making a diagnosis of pyloric stenosis the condition most often confusing is pylorospasm. The symptoms are quite similar and the clinical difference is largely one of difference in severity of the presenting symptoms. The pylorospasm vomiting is less constant, and less uniformly projectile in character; constipation is not as marked; and visible gastric peristalsis is less obvious. Because the obstruction is less, there is more likely to be some regular gain in weight.

Other conditions to be differentiated from pyloric stenosis are:

(1) Atresia of the pylorus, which gives signs similar to pyloric stenosis, but present from birth. It calls for prompt surgical intervention.

(2) Duodenal obstruction, which may be due to stenosis, or to constricting congenital bands resulting from abnormal developmental processes. Pronounced visible gastric peristalsis is always an indication of pyloric or duodenal obstruction.

(3) Duodenal ulcer, which produces symptoms similar to pylorospasm noted above, except that if the ulcer is below the ampulla of Vater the vomitus is apt to contain bile.

(4) Atresia of the intestines below the duodenum. This results in vomiting, beginning soon after birth, though not of a projectile character, and it does not produce visible gastric peristalsis. In this condition also no fecal matter is passed from the bowel.

Once the existence of pyloric stenosis is suspected the question is whether treatment should be medical or surgical. Mild cases in which there is a large element of spasm *may* respond to medical treatment. This will consist primarily of thick cereal feedings, with the administration of atropine or similar antispasmodic drugs, phenobarbital, calcium, and vitamin B therapy. But if there is much organic obstruction medical treatment is of no avail; it will only necessitate a prolonged course of treatment with much danger of death from acute inanition or intercurrent infection.

The infant's weight curve is the best index to the effectiveness of medical treatment. If the baby is in good condition when first seen and is gaining weight in spite of the vomiting, continuation of this treatment may be justifiable. If there is no improvement after one to two weeks, or if the baby's condition is not good when first seen it should be treated surgically.

Medical treatment is justified only so long as there is definite improvement, as indicated by consistent gain in weight. In the majority of cases, after the diagnosis is established, surgery is the treatment of choice.

The operation for congenital pyloric stenosis is definitely standardized. Certain factors governing our surgical success should be stressed. Pre-operative care is of paramount importance. Too often these babies when first seen are already completely dehydrated with extreme loss of weight, and in no suitable state for operation. Essential pre-operative care then consists largely in restoring fluids and electrolytes lost by persistent vomiting. If the nutritional condition has become very bad, transfusions are given. Dehydration is combated by administration of saline or 5 per cent dextrose in saline, Ringer's solution, or Hartman's solution by hypodermoclysis or intravenously, depending on the urgency of the case. The operation for pyloric stenosis is never an emergency procedure; 24 to 48 hours spent in combating the dehydration before operation has been found to go far toward reducing its operative risk. The undernourished and dehydrated condition of these patients has been more often responsible for a fatal outcome than any strictly surgical cause.

In our series of cases I have used an upper rectus incision, quite a small one, just over the pylorus; thus the pylorus can be readily located and at the same time pulled into the incision with the index finger and thumb so that there will be no chances for the small intestine to get into the incision. The incision into the pylorus is begun on the gastric side and carried over to the duodenal side; this incision should be made through the least vascular area. It has been my practice to separate the musculature with the very small hemostat, again beginning on the gastric side and continuing on to the duodenal side and using meticulous care, so that there will be no tearing into the mucus membrane. This accident happened in one of our cases. The mucus membrane was closed promptly, and no post-operative effects followed. But it is definitely an accident, and if the proper precaution is used it should not happen. No attempt was made to cover this

raw surface in any of my cases, and I have had no post-operative complications to indicate any ill results following this operative procedure.

The abdominal wall is closed with through-and-through silk worm sutures. Peritoneum and fascia are closed with continuous Double-O chromic catgut. I have had no evisceration, and our records do not show any post-operative hernias. I think it is of great importance to put in through-and-through silk worm sutures, especially if the baby is below par and not adequately nourished prior to operation.

In performing this operation consideration must be given to the difference between the infant and the adult. One important difference is the ease with which the infant becomes chilled by loss of body heat, with resulting shock. The maintenance of body heat during the operation by avoiding unnecessary exposure of the body surface, and by careful use of warm blankets and hot water bottles while the patient is on the operating table is extremely important. Skilful surgical technique, avoidance of undue trauma, and a judiciously administered anesthetic are essential in preventing shock and conserving the infant's vitality during the operation.

The anesthetic plays an all-important role in successful operations on these young babies. We have adopted the following procedure: local infiltration with ½ of 1 per cent novocaine supplemented by a few drops of chloroform. As to chloroform, I think a warning is imperative here to every surgeon and anesthetist who may expect to adopt this type of anesthesia. I want to emphasize the fact that Dr. Goldman, an experienced anesthetist and a specialist, gives the chloroform for us. He had a liberal experience in using chloroform for tonsillectomies in former years, and he has the proper respect for this anesthetic and gives it efficiently, with the proper precautions. This combined anesthesia has disturbed the babies very little, so far as we have been able to tell, and we have been able to have them return to their feeding promptly. It is true that this operation can be done under local anesthesia, but in our experience there is always some straining when traction is put on the pylorus; this certainly influences one's technique in completing the operation and might be a factor in the result. Therefore, we have adopted the method of giving a few drops of chloroform for relaxation at that stage of the operation.

Post-operative conservation of body heat, combating dehydration, restoration of lost electrolytes and good nursing care to prevent infection are other prime requisites in the successful surgical treatment of pyloric stenosis.

Illustrating the need of good post-operative nursing care is Williams' report of three deaths out of 106 cases treated surgically, of which one was due to broncho-pneumonia, and one to accidental asphyxia from inhalation of vomitus.

Fluids in the form of normal saline, Ringer's or Hartman's solution must be supplied parenterally for several days after operation in order to combat dehydration. A total of at least three ounces of fluid per pound of body weight should be provided, a large part of which will have to be given by hypodermoclysis or by vein. If the infant's nutritional condition is bad, blood plasma or transfusion of whole blood is indicated. The caloric intake during the early days is less important than fluids and electrolytes. For the first three or four days no attempt is made to meet the infant's caloric needs. Faber and Davis,[6] and Ochsner[7] maintain that post-operative depression of gastric peristalsis lasts for twenty-four hours or longer and advise withholding food by mouth for the first twenty-four hours. Our experience has not shown this to be necessary and our practice has been to start water by mouth within two to three hours after recovery from the anesthetic. One or two teaspoons of 5 per cent lactose solution is given every two hours, and after four to six hours breast milk or artificial feeding diluted to half its usual strength for the baby's age is given; at first one to two teaspoons every two hours is sufficient, this and the lactose solution being given alternately. The quantity of lactose solution and formula or breast milk is gradually increased during the succeeding twenty-four hours, depending on how it is taken and retained. It is usually well retained and after twenty-four to forty-eight hours, small feedings are given every three hours with lactose solution half way between feedings. After several days, food normal for the baby's age and weight can usually be taken. It is important that only small quantities be given at first and that increases be made slowly so as not to exceed the infant's tolerance.

The twenty-six cases which we report today are private cases from the Johnston-Willis Hospital. They have been treated according to the principles discussed above, and, although the number is too

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small to draw any statistical conclusions, we feel that our results have been highly satisfactory. In this group of twenty-six cases there have been no fatalities. These cases were completely worked up; and while we have had a number of pyloric stenosis cases at other institutions, they are not recorded in this report. I might say, however, there are no deaths in our series either at the Johnston-Willis or at other hospitals.

In our series the onset of symptoms was at one to four weeks of age and operation was performed within a few days to a week after the diagnosis was established. For the most part convalescence was uneventful. There was very little post-operative vomiting, and usually there was rapid gain in weight after full feedings were resumed. One case had a slight wound infection; and one developed bronchopneumonia which responded promptly to sulfathiazole therapy. In another case in which there was slow healing with an unhealthy appearance of the abdominal wound, healing took place promptly after blood plasma was given.

From a surgical standpoint the most impressive fact in our series was the excellent condition in which a number of these babies were brought for operation. This was due to sound pre-operative treatment, and I consider it the most important factor in our resulting zero surgical mortality with 100 per cent of our cases. If pyloric stenosis patients are allowed to go undiagnosed and to get in poor physical condition, it prolongs their hospital stay tremendously and at the same time increases their surgical risk. Early recognition and accurate diagnosis are essentially important, if we are to make the progress that should be made with our present means of repairing this serious congenital defect successfully.

CONCLUSIONS

1. Congenital pyloric stenosis is a condition in which the treatment of choice is surgical. If good surgical facilities are available the chances for recovery are much better than with any plan of medical therapy.

2. For best results operation should be performed as soon as the diagnosis is established and adequate pre-operative treatment given.

3. Before operation dehydration should be overcome and electrolytes restored by parenteral administration of fluids. If the nutritional state is bad, transfusion should be given before and after operation.

4. The Fredet-Ramstedt operation is the one of choice. During operation avoidance of unnecessary trauma, maintenance of body heat, and a carefully administered anesthetic are important. Chloroform is valuable when given cautiously by an expert.

5. Post-operatively the baby should have good nursing care and body fluids should be maintained by parenteral administration of salt solution, supplemented by glucose, or transfusion if the condition is not good.

6. No attempt should be made to meet caloric needs by oral intake for the first four to five days following operation. Lactose solution (5%) and diluted feedings are given alternately at one to two hour intervals, beginning with very small amounts several hours after reaction from the anesthetic, and increasing the quantities very gradually.

7. Ether, or, if an expert anesthetist is available, chloroform, by the open drop method, combined with novocaine locally, are the anesthetics of choice.

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DISCUSSION

DR. W. LOWNDES PEPLE, Richmond: Dr. Johns has so thoroughly covered the diagnosis and treatment of this condition that there will be little that I can add except to emphasize some of the points that he has brought out and to add a little to the question of technique.

This is one of the most dramatic things that we surgeons encounter, as Dr. Johns has remarked. We are getting these cases today in a very different condition from those we saw in the early days. My experience dates back to the beginning of the operation in this part of the country. I have some over thirty years old. In those days we had to do a gastro-enterostomy, for the Ramstedt operation had not then been devised. To do a gastro-enterostomy on a tiny, shrunken, little worm such

as these little patients appear to be when they come to the table, is extremely difficult. However, I did two that survived, and made good recoveries.

I have had forty or fifty cases. I have not been as lucky as Dr. Johns has been, for I lost one in our own hospital and two in other hospitals.

As to the question of diagnosis, if you get a case of congenital pyloric stenosis in the first week, it is usually something else. Change your mind; hold off your diagnosis if it comes very early. This condition comes anywhere from the second to the fourth or even in the sixth week; seldom does it come in the first.

There was one very warm subject of controversy every time this subject was brought up in medical gatherings a few years ago, and that was as to whether these cases should be treated medically or surgically, some claiming that all cases were surgical and others claiming that all were medical.

If you exclude those with pylorospasm, it is true that we have some borderline cases of true pyloric stenosis in which the increase of tissue is not great enough to cause complete obstruction; and these babies under careful, skillful treatment will get well. There is no controversy at all. If the baby's stomach is stopped up so that nothing can get out of it, and you leave that baby alone it will die.

Interestingly enough, the vital statistics will show a decrease in deaths from marasmus, or acute inanition, as knowledge of pyloric stenosis has progressed. These children used to die from marasmus, but whether incorrectly diagnosed or not, they died.

There is a difference between pyloric stenosis and mechanical obstruction. A child with mechanical obstruction does not want anything more after the stomach is emptied. The child with pyloric stenosis is eager for something immediately and will take water or food over and over again.

There is that curious ball wave peristalsis. I understand that Dr. Smith of St. Elizabeth's clinic has a short moving picture and that part of it will show this ball wave peristalsis. After this discussion is completed I am sure he will be glad, as a part of his discussion, to show this picture.

(Dr. Peple here showed a couple of slides which he described.)

(Slide 1.) This is to show the radiogram of one of these little cases. You see how completely the stomach is blocked up, with only a little barium going through. You may ask, if the cases are doubtful, why not give it to all of them as part of the diagnosis. The reason is this. If you give it you will have a whole lot left in the stomach and bowels when you are ready to operate, and it is very messy. It is difficult to wash out of the stomach, and it is a very important part of this operation to have the stomach empty at operation, for two reasons. One is that it makes it difficult to handle the stomach if it is not empty, and the other is that when you open the pylorus and let all this material down into the intestines, you have something that will either upset the child's digestive tract or at least give it a fever.

(Slide 2.) Here is the bulb or tumor, showing how the walls have increased from the normal. We do not feel this in all the cases; only in the late cases can it be felt through the abdomen.

As Dr. Johns said, the incision is made in the long axis of the stomach right across the circular muscle, cutting carefully up to where the pyloric ring meets the other part of the intestine. There is some fine technique needed here, for it is easy to cut into the duodenum. On top of the tumor are some very small arteries, which are visible. It is very hard to tie them by clamping with hemostats. I usually take a tiny needle such as eye doctors use for the sclera, with the finest silk thread, and ligate them before dividing them.

The question is often asked, why do you not have an obstruction here after healing takes place; why do you not have a scar causing obstruction later on? I have never had occasion to go back in any of these little people to see what the result is like, to see what the scar is like. But neither have I ever seen an obstruction follow this operation.

When you go to operate on your first case you feel as if you are Gulliver in the Land of Lilliput. The baby is in the middle of the table and has to be held. You have to have little instruments. To overcome this difficulty I devised a table some years ago. It is just a little wooden table fastened by straps to the big table. It lifts the baby up to you. There is a drawer in it, and that holds two hot water bottles to keep him warm during the operation. That makes it impossible to burn the patient. We have little sheets, little towels, little blankets. The nurses like that because it takes them back to their dollhood days. The little table is lashed to the big table, so it follows the movement of the big table, and will not turn over.

Chloroform would be the anesthetic of choice if you have a good anesthetist, old enough to have lived in chloroform days. Next to that I think is drop ether. In the little babies who are almost dead and very thin and very weak you can get along very satisfactorily with local anesthesia. They do not have strength enough to strain. We sometimes use the same anesthetic that a Jewish Rabbi uses in circumcision; a sugar rag dipped in wine. It is a good one.

I was very proud of the little table, because it was very helpful, but a friend of mine took a look at it and said it looked like a rabbit trap. That upset me, but it does look like a rabbit trap, and that makes it worse.

Dr. Johns made the statement that these little people have to have meticulous care, and that is true. A good baby doctor knows how to feed them; the surgeon usually does not. It is wonderful how quickly they respond to proper nourishment, and turn pink and plump up.

Speaking of the little details, I shall never forget one gastro-enterostomy. I knew the operation had been done well, but there was something wrong. It was not working. About the third day I took all the dressings off. When we removed the last piece of adhesive I heard a

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very audible gurgle, and the baby was all right from that moment.

This is a dramatic thing as we have said before. There lies a little, tiny baby, with big eyes and hungry mouth, begging constantly with his eyes for something more to eat and then immediately vomiting it up, losing weight, losing strength. To see that child restored to normal is really worth everything, and to see the mother as the little baby grows step by step is almost as good for one's soul.

VICE-PRESIDENT BOYD: We would like to hear from Dr. James B. Stone, the co-author of the paper.

DR. JAMES B. STONE, Richmond: I have little to add to what Dr. Johns has said but should like to stress a few points. One is the importance of an early diagnosis and prompt institution of proper therapy if the cases are to be saved. The diagnosis is not difficult and, after it is once made, the treatment of choice is surgical—unless the symptoms are mild, the baby is not vomiting regularly, and is gaining in weight. The surgical mortality has declined very much in recent years, due not so much to change in technique as to better pre-operative and post-operative care. The mortality under the old methods of medical care was 50 per cent or more. In recent years, with improved pre-operative and post-operative care, the mortality in surgically treated cases has been reduced to less than 3 per cent.

The pre-operative care is largely a matter of combating dehydration and restoring electrolytes which have been lost. During the operation the conservation of body heat and the avoidance of undue trauma should be stressed, as well as good surgical technique. In the post-operative period the maintenance of body fluid and good nursing care are important. It is a mistake to try to meet these babies' caloric needs by oral feeding during the first few days. Usually it is four or five days before they can take much by mouth. Food is not so important at this period but fluids are, and need to be given parenterally for several days after operation. Good nursing care is very important post-operatively if these babies are to have the best chance, because, otherwise, they may die of some intercurrent infection, or accidental asphyxia from aspiration of regurgitated food.

DR. E. A. HARPER, Lynchburg: I should like to say just a word or two about this problem from the medical or pediatric point of view. I should like to say first how much I enjoyed Dr. Johns' presentation, which has covered the subject most thoroughly.

As Dr. Johns says, one of the most important things is pre-operative and post-operative care of the patient. I should like to emphasize again that these cases are never an emergency. It is better to take your time and get them in good condition before operating than to rush them into the operating room and have them die from shock.

One of the best descriptions I have heard of the peristaltic wave is that given by a patient, who said it is like a snake thrashing around in the baby's abdomen. That is one thing that the nurses will notice.

One thing I have found helpful in diagnosis is to take off all the baby's clothes, put him in a tub of warm water, give him as much orange juice as he will take, and begin to palpate the abdomen under the warm water. He will promptly vomit and then, with the abdominal wall soft it is usually easy to feel the olive-like tumor.

When Dr. Johns said the muscle fibers end abruptly at the duodenum, that should be emphasized. They do end abruptly. The surgeon who pokes around too much with his hemostat in order to get every fiber is likely to find his hemostat in the duodenum. I think the answer to it is to do the job quickly, thoroughly, and with no puttering.

I was very much interested to see Dr. Peple's table and I hope I can get a carpenter to make one for us when I get home.

Let me say again that I enjoyed the paper very much.

DR. W. C. KAPPES, Huntington, West Virginia: There are a few points I would like to stress about this very appropriate paper of Drs. Johns and Stone. The first is in regard to the cooperation between surgeon and pediatrician, especially as regards the feeding of these infants post-operatively. In our experience we have had cases where the infants, because of improper feeding, have continued to vomit after operation, and, in one particular instance that I recall, we were about to re-operate a child because we thought that possible we had not severed all of the fibers of the fibrous ring at the pylorus, but fortunately a pediatrician who was called in was able to rectify the condition by proper feeding.

Another point as regards technique that we have found useful is that we make a short incision and make it high so that the first thing encountered when the abdomen is opened is the border of the liver. The stomach is then drawn out through the incision and the pyloric tumor is ready for operation. A small incision prevents extrusion of the small intestines in case the baby strains too much during operation. We make a very small incision into the pyloric tumor with a very small knife and the fibers are separated with a very small forcep. When these fibers are opened the feel is that similar to when one cuts into an onion.

In most of our cases we have found that local infiltration of the skin and the use of a sugar tit in which a few drops of paregoric have been put will suffice so far as anesthesia is concerned.

DR. HUGH H. TROUT, Roanoke: There are three things I want to speak about on this very interesting subject. The first is diagnosis. I do not know who first put us on to it, but one of the things we have picked up through the years is that if you put the baby in a tub of warm water and then turn him over on his abdomen and with your hand on his abdominal wall, very often you can feel that little olive mass when you cannot find it in any other way. Simply pat your hand up and down and sometimes you can feel the mass bobbing against your fingers.

Second: Sometimes an x-ray picture will give corrobo-

rative evidence, and it takes only a minute or two to do it. As Dr. Johns says, we do not want to put any mess of barium in the stomach.

Dr. Peple sent me one of these tables about twenty-five years ago, and there has never been anything that has given me more comfort in my surgical career than this little table. At the last meeting of the American Surgical Association, I was describing it to three men who do as much work on children as any three anywhere in this country, and they had never heard of that table. I sent each one of them one of those tables. Dr. Ladd, of Boston, who confines his surgical work to children, wrote me and said this table had been of much comfort to him. Dr. Staige Davis, of Baltimore, and Dr. Vilray Blair, of St. Louis, have also found the Peple table of comfort to them and to their little patients.

There is one case I should like to report. We had a case who had had a gastro-enterostomy done when he was an infant. He was operated on before the advent of the Ramstedt operation. We operated on him about 25 years after his gastro-enterostomy, and the operation showed a tremendous mass. At first we thought this was a carcinoma extending down into the duodenum and blocking the common duct. He was jaundiced and had a marginal ulcer. We had to take down the gastro-enterostomy and do a resection and anastomose the stomach to the jejunum—Polya type of operation. Interestingly enough, there was no sign of malignancy. I have a feeling that this fibrous tissue which was formed at the pylorus is a defensive process.

When a Ramstedt type of operation is done, the food goes on through the pylorus without meeting any resistance, and, therefore, the production of fibrous tissue ceases and the fibrous mass disappears as the child becomes older. In the patient who had had a gastro-enterostomy in infancy, of course, the pyloric mass was allowed to remain. It is probable that food continued to try to go through the pylorus, which the fibrous tissue prevented. The patient continued to produce more and more fibrous tissue at the pylorus because of the constant and repeated attempts of food to force itself through the pylorus. At least this is a plausible explanation of the finding of such a large amount of tissue at the pylorus in the case we are reporting.

DR. JOHNS, closing the discussion: I wish to thank the gentlemen for discussing this paper and for their liberal comments, which I appreciate very much.

In closing the discussion, I should like to re-emphasize one point which applies particularly to my own series. This is the preparation of the patient for operation. This work has been done with extreme care and efficiency by Dr. Stone and Dr. Jones, two active pediatricians on our staff; and I am convinced that this pre-operative preparation, plus the post-operative care given our patients, has had much to do with the successful handling of this series of pyloric stenosis cases.

I will also repeat emphatically the importance of the nursing care for each case. Every child who has had an operation for pyloric stenosis should have a special nurse, for at least 48 hours, or until he is past the danger stage.

Dr. Kappes' question about the incision was very interesting. I think the size of the incision is certainly important. But the thing that is more important, as regards the incision, is the sort of anesthesia you have. Complete relaxation is essential when you make your incision into the pyloric side of the stomach. As you continue to separate the fibers toward the duodenum where these fibers stop abruptly, the child must remain quiet and relaxed. The cases we had under local anesthesia struggled a little at this stage, for which reason we prefer the use of chloroform in the hands of our skilled anesthetist. I think it was at this stage of the operation that Dr. Kappes had his punctures. We have had no fistulas at all, in our series. I should, in fact, hate to have one in an infant so small. A sugar-bag may be a useful adjunct until the operator gets down to the pylorus. That is when these patients struggle, unless there is complete relaxation, and that is the point in our procedure when we do not want them to struggle.

We have x-rayed these patients in doubtful cases; but barium, of course, is like cement in the intestinal tract. We have explored no cases that did not have pyloric stenosis.

Russian War Relief.

The American people in 1944 contributed almost $23,000,000 in cash and goods to Russian War Relief, making a total of $46,246,240 received by the agency since its inception a little over three years ago, as reported by Edward C. Carter, president. Clothing, medical and surgical supplies, household kits, seeds and miscellaneous relief items valued at $14,675,839.81 were contributed to the agency direct and $8,019,272.90 in cash was contributed through the National War Fund. Supplies valued at $66,-294.49 were turned over to Russian War Relief during the year for processing, packing and shipping to Czechoslovakia by American Relief for Czechoslovakia, Inc.; supplies valued at $31,919.25 destined for Poland were similarly handled during the year for Polish-American groups.

XUM

DERMATITIS IN THE AMERICAN MUNITIONS INDUSTRY*

JAMES Q. GANT, JR., SURGEON (R),**
U. S. Public Health Service,
Bethesda 14, Maryland.

The importance of occupational skin diseases in slowing down production is not generally appreciated. Actual time lost caused by dermatitis from explosives amounts to thousands of man hours.

Among workers in certain types of munitions manufacturing, dermatitis is the most frequent occupational disease. From 2 to 50 per cent of all new workers handling explosives such as tetryl develop dermatitis after five or more days of work, depending upon the degree of exposure[1].

Explosives are grouped into propellants and bursting charges. The propellants release their energy relatively slowly, thereby allowing their kinetic energy to propel the bullet, projectile, or rocket without destroying the releasing mechanism, whereas bursting charges release their energy rapidly and are thus effective in military high explosives (Figure 1).

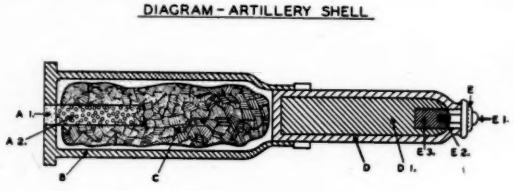

Figure 1.—Diagram of an artillery shell.

PROPELLANT CHARGES

Smokeless powder is one of the principal propellant charges used today. It is made by nitrating cotton or wood pulp and processing it into a colloidal mass into which are incorporated various chemicals which regulate the speed of burning and stability. The colloid is processed into "grains" which vary in size according to the weapon in which the propellant is to be used.

*Read before the annual meeting of the Medical Society of Virginia at Richmond, October 23-25, 1944.

**From Dermatoses Section, Industrial Hygiene Division, Bureau of State Services, U. S. Public Health Service, Bethesda, Maryland.

Double base powder is another propellant and is commonly used for mortar and rocket shells. It consists of nitroglycerin in a nitro-cellulose base to which certain chemicals have been added to regulate the speed of burning.

Dermatitis rarely occurs among workers making smokeless and double base powder. Occasionally, contact with inhibitors and plasticizers, such as dinitrotoluene, hexamine, and dibutylphthalate, may produce an allergic contact dermatitis of an erythematous vesicular type. Solvents, such as ether and alcohol, also occasionally lead to dermatitis, and inhalation of their fumes may result in an eruption resembling acne rosacea. Nitroglycerin may be absorbed through the intact skin and cause systemic symptoms.

Black powder was formerly the only propellant in use. It was supplanted by smokeless powder in 1870, but is still used in primers, fuses, igniters, military pyrotechnics, and incendiary devices. This powder is made from charcoal, sulphur, and various nitrate salts. Black powder has rarely if ever been reported as the cause of dermatitis among the workers handling the finished product.

BURSTING CHARGES

High explosives are grouped into (1) sensitive explosives which are easily detonated and used in boosters, fuses, primers, and detonators, and (2) stable explosives which are not easily detonated and are used for the principal explosive charges. They are described as stable because a secondary explosion from the booster system is needed to cause detonation.[2]

SENSITIVE EXPLOSIVES

This group of explosives includes tetryl, fulminate of mercury, lead azide, and lead styphnate. They are easily caused to explode by means of a blow, friction, or shock of contact.

Tetryl (trinitrophenylmethylnitramine) is a light yellow crystalline powder and is the most frequent cause of allergic contact dermatitis in the munitions industry. About 30 per cent of all workers handling this compound develop dermatitis after five to ten days of exposure. After several days, the acute

dermatitis subsides, healing occurs, and, in the majority of cases, the worker can continue without further trouble. Schwartz[3] considers this to be a "hardening" or a desensitization phenomenon. This is especially true of those workers who can continue their exposure to tetryl while receiving treatment. There are a few people who never develop a tolerance and in whom even a very slight exposure to tetryl will result in an acute flare-up of their dermatitis. The most frequent sites of tetryl dermatitis are about the mouth, eyes, cheeks, and neck. The acute phases of the eruption are characterized by erythema with vesicles and oozing; the edema may be of such severity as to close the eyes (Figure 2).

Figure 2.—Dermatitis due to tetryl.

Infrequently the genitalia and other parts of the body touched by the worker's soiled hands may be affected. A nosebleed without ulceration of the nasal mucosa often occurs. Toxic systemic manifestations are mild and infrequent.

Tetryl is also a powerful yellow dye and almost all workers coming in contact with it have yellow staining of the hands, face, neck, and hair, with or without evidence of dermatitis. Workers thus affected are often called "canaries". This stain, which most workers consider a sign of distinction, is difficult to remove by means of washing with soap and water. However, an aqueous solution of 10 per cent sodium sulfite, or a soap containing potassium sulfite, will materially aid in the removal of the tetryl. This method of washing also serves as an indicator. As long as free tetryl is present, there is formed, in the presence of the sulfite, a dark red solution which is readily discernible. The workers are instructed to continue washing until no more color is seen upon the application of unused indicator solution.

Fulminate of mercury is a dark yellow crystalline solid used in primers and detonators. It is the first explosive (primer) set off by contact with the firing pin, thereby firing the propellant charge. Also, it is the first to be set off when the shell or projectile (detonator) strikes the target. This in turn sets off the train of explosives in the fuse and booster system which results in firing the principal bursting charge.

The workers engaged in manufacturing this explosive rarely develop dermatitis as it is handled under water. However, those workers engaged in filling primers and detonators are frequently affected with allergic contact dermatitis, as they are handling the fulminate in a dry, dusty form. Also, there is more intimate contact on the assembly job. Dermatitis is usually noticed five or more days after exposure, and occurs most often on the face and hands. The body may also be affected as the dust sifts through the clothes. The fulminate dust may cause nasal irritation and conjunctivitis. Abrasions and cuts contaminated with it often become ulcerated.

Lead azide is a highly sensitive explosive and is used in detonators and primers. It rarely causes dermatitis.

Lead styphnate is an orange-brown powder used in primer mixtures and produces dermatitis and staining of the hair and skin a yellow color similar to that described under tetryl.

Nitroglycerin is a liquid of extremely high explosive power, but is so sensitive that it is not used as such in military explosives. It is used in combination with other materials in preparing double base powder and dynamite.

The literature contains reports of dermatitis of the hands and ulceration occurring under the fingernails among workers exposed to nitroglycerin, the last report being dated 1923. The Dermatoses Section, in its investigations of plants making and handling nitroglycerin, has not seen dermatitis or ulcerative lesions caused by this compound.

Considerable quantities of nitroglycerin may be absorbed through the intact skin and by the inhalation of fumes. This may give rise to headaches, nausea, vomiting, and other systemic effects[4].

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STABLE EXPLOSIVES

This group of explosives includes TNT, DNT, amatol, explosive D, hexite, PETN, and RDX.

TNT (trinitrotoluene) is a light brown crystalline solid and, after tetryl, is the most frequent cause of dermatitis in the munitions industry. Workers engaged in TNT manufacture have a considerable exposure to it during the final stages of manufacture and in the packing and shipping departments. Exposure to TNT is still more frequent in bomb, shell, and torpedo loading plants.

Dermatitis most frequently occurs on the hands, wrists, and forearms, and also at points of friction, such as the collar line, belt line, and ankles. Rarely, a generalized dermatitis may occur. This type usually requires hospitalization. Characteristic of TNT dermatitis are the vesicular lesions of the palms, which are deep-seated and about the size of a pea. Considerable edema is present in the adjacent tissues (Figure 3). The inflammatory reaction

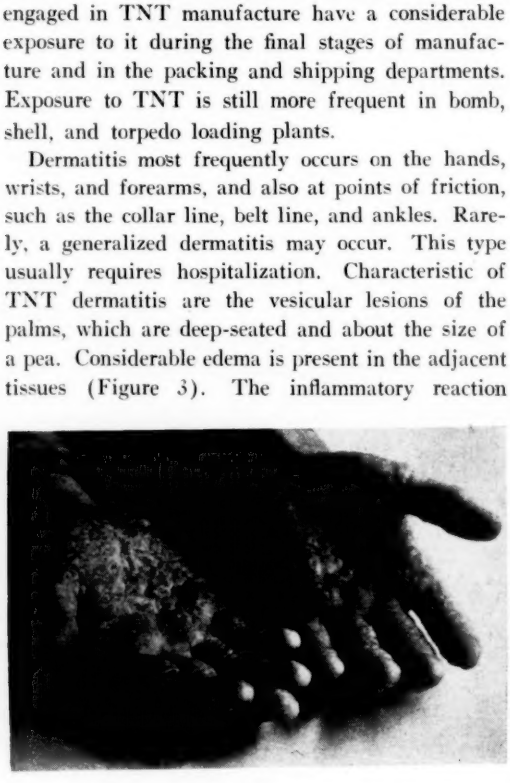

Figure 3.—Dermatitis due to TNT.

usually subsides in 7 to 14 days with marked desquamation, usually in large plaques. The other cutaneous lesions are not characteristic and consist of papules and vesicles on areas of erythema, which gradually subside and are followed by flaky desquamation.

Staining of the skin and hair occurs as in tetryl, except that the color has a more definite reddish hue. Sodium sulfite solution removes TNT with a resulting purple-red color[5].

TNT may enter the worker's body by way of the respiratory and gastro-intestinal systems, and also by absorption through the intact skin. Workers having toxic systemic manifestations may show cyanosis of the face and lips[6]. Because of the ever-present danger of systemic poisoning, TNT workers in this country have periodic physical examinations, urine analysis, and blood counts every 30 days. These are standard practices to give maximum protection to the workers.

DNT (dinitrotoluene) is an intermediary product in the TNT synthesis, used in smokeless powder manufacture. Its properties in regard to dermatitis and cutaneous absorption are less than those from TNT.

Amatol is made by mixing molten TNT with ammonium nitrate. The principal skin hazards are from the TNT content, but because of the hydroscopic qualities of ammonium nitrate the workers' shoes and clothes become saturated and maceration of the skin readily occurs.

Ammonium picrate (explosive D) is an orange-colored crystalline powder made by reacting picric acid with ammonia. Workers exposed to it during the various stages of manufacturing and shell and bomb loading are affected with dermatitis. It is the dry picric acid and ammonium picrate which are prone to cause dermatitis and staining of the skin, hair, and clothing. Both of these are yellow dyes and are difficult to remove. When the eruption occurs, it most frequently appears on the face and begins with erythema progressing to papules, vesicles, and oozing which on subsiding result in desquamation. Hardening or desensitization occurs among the majority of workers. On entering the drying rooms where dust is very prevalent, the visitor experiences an extremely bitter taste. Workers are always more or less aware of this sensation. Toxic symptoms are comparatively rare.

Hexite (hexanitrodiphenylamine) is a yellow crystalline solid which stains the skin and hair a yellow color. This compound and its source, dinitrochlorbenzene, cause a vesicular dermatitis and irritation of the nasal mucosa.

PETN (penta-erythritol-tetranitrate) is one of the new explosives. Dermatitis has as yet not been reported.

RDX is also one of the new high explosives. Dermatitis occurs during the various steps of manufacturing and is caused by hexamine and related compounds which may be very irritating to the skin and mucous membranes.

MISCELLANEOUS GROUP OF EXPLOSIVES

Tracer bullets can be seen in the dark because

the propellant charge on exploding sets fire to the igniter powder which in turn lights the tracer powder which slowly burns. These charges are located in the base of the bullet in a small concavity made especially for this purpose. Strontium and barium salts, together with resins, make up the principal ingredients. Dermatitis rarely occurs in workers handling these materials.

Incendiary and smoke charges are placed in shells and bombs to set fire to the target or to create a smoke screen. Many special mechanisms and materials are used for this purpose. Burns occur occasionally among workers handling white phosphorus and other incendiary materials.

PREVENTION OF DERMATITIS

The workers should be protected as much as possible from contact with chemicals and explosives by means of engineering control, such as general ventilation, local exhaust systems to carry away dust and fumes, air conditioning, and, where practical, by enclosed manufacturing processes. These controls are in use in many plants.

Protective clothing and underwear should be available and be laundered by the plant. The majority of plants insist on a change to clean coveralls, socks, underwear, and headcaps before beginning on the work shift[7]. Laundry service is usually furnished.

Clean gloves made of closely woven fabrics should be available for use on jobs where chemical dust is prevalent. Highly contaminated gloves only increase the exposure; therefore, they should be changed several times during a work shift. Or, soft washable leather gloves which fasten at the wrist may be used. Over these the worker should wear impervious sleeves that fasten over the wrist and extend above the elbows. Aprons of impervious materials may be worn.

Closely fitting caps or hoods which completely cover the hair will prevent staining. In practice this is seldom accomplished, because the workers like to wear their headgear at jaunty angles and thereby expose the hair.

Protective ointments of the type developed by Schwartz[8] may be used on those areas of the body which cannot be covered by protective clothing or industrial masks.

Petrolatum jelly used in the nostrils several times during a work shift will materially lessen nasal mucous membrane irritation. However, if dust control is adequate, this will not be necessary.

Shower bathing at the close of work is of paramount importance in the prevention of occupational dermatitis in the munitions industry. This is compulsory in many plants.

If environmental control is adequate, it has been found that all workers need not use many of the enumerated protective measures. Those workers who have not developed dermatitis and those who have become "hardened" need not do more than wear clean work clothes daily, wash their hands frequently after excessive exposures, and bathe at the close of work. Only new workers, those who do not become "hardened" and those workers having mild dermatitis, need observe the recommendations in regard to gloves and protective sleeves, aprons, and ointments.

TREATMENT OF DERMATITIS

The patient should be removed from his job only if the dermatitis is severe and spreading. Workers having mild cases of dermatitis are usually kept under treatment while they are on the job. It has been found that the great majority of workers develop "hardening" or become less sensitive and are able to continue on with their work without further trouble.[9]

Patients with severe dermatitis should be removed from all contact with the offending chemical. Blood and urine examinations should be made to detect possible toxic systemic changes. Hospitalization may be necessary. The patient must be thoroughly cleansed to remove the offending chemical agents from the skin and hair. It is impossible to entirely remove the stain from the skin and hair, since it is fixed in the keratin layer, but it is gradually cast off by exfoliation.

Wet dressings, colloidal baths, borated talcum, and mild shake lotions should be used during the acute phases. As this stage subsides, bland ointments may be used.

In cases of exfoliative or severe, widespread dermatitis, dermatologic consultation may be necessary.

The patient who has recovered from a severe dermatitis caused by explosives is likely to still be highly sensitive and should in most cases not continue in the same type of industrial exposure.

SUMMARY AND CONCLUSIONS

1. The various explosives now being manufac-

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tured in the United States have been discussed.

2. The types of dermatitis which are most likely to occur, along with their characteristics, are described.

3. Methods of prevention and treatment are discussed.

4. Dermatitis from contact with explosives, either during manufacture or while being loaded into military weapons, may be prevented to a considerable extent by proper preventive measures.

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DISCUSSION

DR. THOMAS W. MURRELL, Richmond: Before I go into the general discussion, I should like the privilege of expressing my personal gratification. I do not think there is anything more heartening in a teacher's life than to see the potential of a student working into the pattern of success that has been prophesied. Major Gant may be expected to go far in the dermatological field.

Major Gant's paper is an authoritative presentation of one phase of the large subject of industrial dermatoses. With all its war activities, Virginia has practically no munitions plants, and so in most of what he reports the Virginia dermatologists have had no practical experience.

We remember the TNT blondes who worked at Penniman during World War I, and most of us have seen severe sensitization from the picrate ointments popular a short time ago, but for lack of experience there are no case reports to add to what the essayist has presented. Yet industrial dermatitis is a matter of extreme and increasing importance and this paper should be kept in mind because undoubtedly drifters from the arsenals of democracy will come our way and we should be ready to diagnose and treat them, should they be so affected.

There is a statement in Major Gant's paper, twice made, which one has the right to question on theoretical grounds. In the discussion of tetryl and ammonium picrate he refers to workers developing a dermatitis which clears up while the patient continues at work, and quotes Schwartz as considering this a desensitization or a "hardening". This is so entirely contrary to teaching and experience that one is justified in respectfully accepting it with the proverbial grain of salt. As a matter of fact, if a worker develops a dermatitis while at work and the diagnosis of industrial dermatitis is questioned, the worker lays off and recovers, and then the dermatitis recurs on return to work, this sequence is accepted by the courts as evidence of the nature of the eruption. It is strange that something entirely different should occur with two chemicals when the opposite occurs in other industrial irritants.

One thing which is impressive is the number of cases seen from substitute chemicals used in products which are denied their usual formulas because of war priorities. We have seen this in the cellophane industry and particularly with solvents. This statement is also true of the cosmetic industry.

It follows, therefore, that this whole subject is in a state of flux and much that is true today will be corrected when the chemical industry is re-established on a peace basis.

About a year ago the Sylvania Plant at Fredericksburg called me to see 27 girls in one department who had developed a dermatitis. They packed cellophane caps to use on the tops of bottles. The makers could not get the usual ingredients and used a substitute. Twenty-five of the twenty-seven girls had severe dermatitis.

Last week I saw a man from Langley Field who had severe dermatitis. His job was to unpack some parts which were packed in grease. It had been the practice to use carbon tetrachloride, but they could not get that and used a substitute. This man told me he had seen several others with a similar dermatitis.

This is particularly true in the cosmetic industry, in which it has been necessary to use substitutes.

CAPT. TOSON O. SUMMERS, (MC), U.S.N., Senior Medical Officer, U. S. Navy Mine Depot, Yorktown: I happen to be the senior medical officer at the Mine Depot at Yorktown, where we handle a whole lot of explosives. I am sorry I cannot tell you how much. We mix it up in cans like mush. We have had colored girls, white girls, and men.

I have my industrial medical officer here and am going to ask him to make a few remarks.

We have a lot of trouble with doctors. They tell a

man he has a TNT dermatitis, and when he comes back and is checked up most of the time he does not have it. Our people have locker rooms. They have to take off all their clothes or get their clothes wet, because to get to their working clothes they have to go under the showers. When they come out of work they have to take off their working clothes and go under the showers to get to their own clothes. We have not had a case of dermatitis in three years.

DR. THOMAS E. CONE, JR., Lieut. Comdr. (MC) USNR., U. S. Naval Mine Depot, Yorktown: As Captain Summers mentioned, we are not able to tell you how many people we have or how much explosive powder we are preparing; this much may be stated, we are preparing a great deal.

Our dermatitis problem is not very important at present, but it was so when our employees wore protective gloves. It seemed to us that the particles of powdered TNT geting into the gloves and the concomitant constant friction between the glove and the hand produced a dermatitis.

One thing in our favor is that practically all of our TNT workers are Negroes, and I think it is agreed that they are far less subject to dermatitis than white people. The white employees engaged in the handling of TNT have fortunately not been especially bothered with dermatitis. The cases we have seen have been mild.

We have had a large experience with TNT poisoning, particularly from the standpoint of blood changes, which is not under discussion today. But dermatitis, with us, is a very minor problem. Our loss of time from dermatitis is practically nil.

QUESTION: Doctor—in my section of the country we have a tent factory. The employees sew the pup tents together, and I notice a lot of allergic dermatitis has developed from that. I should like to know what chemical produces that.

DR. CONE: I do not know.

THE CHAIRMAN: I will ask Dr. Gant to answer that question for you, if he can.

DR. GANT, closing the discussion: I wish to thank Dr. Murrell for his kind remarks and to thank the other gentlemen who have discussed my paper.

The Dermatoses Section has the records of some 80 plants in the United States and Canada that manufacture and handle explosives. The records cover several thousand cases. We know that "hardening" does occur in the large majority of cases of allergic occupational dermatitis who stay on the job. As an example, about eighteen months ago all the munitions factories had an abundance of munitions and laid off a great number of people. When those people returned to work there was a sharp increase in the number of cases of dermatitis, but after a short time and after continuing work, the number of cases greatly decreased.

As to tenting materials, they are being treated with various finishes. Most of these compounds are antimildew agents, waterproofing substances, and in some instances flame-proof chemicals. A great many of the antimildew compounds are primary skin irritants when used in strong concentrations, and many of them are sensitizers in lower concentrations. We have had no complaints of dermatitis from the flame-proofing chemicals. One of the waterproofing chemicals has caused an outbreak of dermatitis. It was Japan Wax obtained from the plant Rhus vernicefera, member of the same family as poison ivy. In the particular instance cited by Doctor ——, I cannot tell which of these chemicals may be causing the dermatitis as I do not know the materials with which the tenting was treated. If Doctor —— wishes to find out what chemicals are used in the tenting in question, an inquiry directed to the Office of the Quartermaster General, War Department, may give him the information.

Penicillin Aids Closure of Bedsores.

Successful closure of bedsores was carried out with the aid of penicillin administered by injection and locally, Lieutenant Colonel John D. Lamon, Jr., and Captain Eben Alexander Jr., Medical Corps, Army of the United States, report in the February 17 issue of *The Journal of the American Medical Association*. The wounds were closed with sutures of cotton.

They say that much has been published concerning the care and healing of bedsores in recent years, but, as far as they can determine, no reports of the successful closure of these sores have so far appeared in the literature.

The case they describe was that of a soldier with three bedsores on his back, all of them infected. To speed the healing of the sores so that a necessary operation could be done on his spine near one of them, penicillin was injected into a muscle for twenty-four hours. Then the sores were carefully excised, penicillin injected into the tissues around each wound and they were closed with sutures. Ten days later the sutures were removed from the wounds which remained clean and free of infection. The operation on the spine was done three weeks after closure of the bedsores.

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Major Gant's paper is an authoritative presentation of one phase of the large subject of industrial dermatoses. With all its war activities, Virginia has practically no munitions plants, and so in most of what he reports the Virginia dermatologists have had no practical experience.

We remember the TNT blondes who worked at Penniman during World War I, and most of us have seen severe sensitization from the picrate ointments popular a short time ago, but for lack of experience there are no case reports to add to what the essayist has presented. Yet industrial dermatitis is a matter of extreme and increasing importance and this paper should be kept in mind because undoubtedly drifters from the arsenals of democracy will come our way and we should be ready to diagnose and treat them, should they be so affected.

There is a statement in Major Gant's paper, twice made, which one has the right to question on theoretical grounds. In the discussion of tetryl and ammonium picrate he refers to workers developing a dermatitis which clears up while the patient continues at work, and quotes Schwartz as considering this a desensitization or a "hardening". This is so entirely contrary to teaching and experience that one is justified in respectfully accepting it with the proverbial grain of salt. As a matter of fact, if a worker develops a dermatitis while at work and the diagnosis of industrial dermatitis is questioned, the worker lays off and recovers, and then the dermatitis recurs on return to work, this sequence is accepted by the courts as evidence of the nature of the eruption. It is strange that something entirely different should occur with two chemicals when the opposite occurs in other industrial irritants.

One thing which is impressive is the number of cases seen from substitute chemicals used in products which are denied their usual formulas because of war priorities. We have seen this in the cellophane industry and particularly with solvents. This statement is also true of the cosmetic industry.

It follows, therefore, that this whole subject is in a state of flux and much that is true today will be corrected when the chemical industry is re-established on a peace basis.

About a year ago the Sylvania Plant at Fredericksburg called me to see 27 girls in one department who had developed a dermatitis. They packed cellophane caps to use on the tops of bottles. The makers could not get the usual ingredients and used a substitute. Twenty-five of the twenty-seven girls had severe dermatitis.

Last week I saw a man from Langley Field who had severe dermatitis. His job was to unpack some parts which were packed in grease. It had been the practice to use carbon tetrachloride, but they could not get that and used a substitute. This man told me he had seen several others with a similar dermatitis.

This is particularly true in the cosmetic industry, in which it has been necessary to use substitutes.

CAPT. TOSON O. SUMMERS, (MC), U.S.N., Senior Medical Officer, U. S. Navy Mine Depot, Yorktown: I happen to be the senior medical officer at the Mine Depot at Yorktown, where we handle a whole lot of explosives. I am sorry I cannot tell you how much. We mix it up in cans like mush. We have had colored girls, white girls, and men.

I have my industrial medical officer here and am going to ask him to make a few remarks.

We have a lot of trouble with doctors. They tell a

man he has a TNT dermatitis, and when he comes back and is checked up most of the time he does not have it. Our people have locker rooms. They have to take off all their clothes or get their clothes wet, because to get to their working clothes they have to go under the showers. When they come out of work they have to take off their working clothes and go under the showers to get to their own clothes. We have not had a case of dermatitis in three years.

DR. THOMAS E. CONE, JR., Lieut. Comdr. (MC) USNR., U. S. Naval Mine Depot, Yorktown: As Captain Summers mentioned, we are not able to tell you how many people we have or how much explosive powder we are preparing; this much may be stated, we are preparing a great deal.

Our dermatitis problem is not very important at present, but it was so when our employees wore protective gloves. It seemed to us that the particles of powdered TNT geting into the gloves and the concomitant constant friction between the glove and the hand produced a dermatitis.

One thing in our favor is that practically all of our TNT workers are Negroes, and I think it is agreed that they are far less subject to dermatitis than white people. The white employees engaged in the handling of TNT have fortunately not been especially bothered with dermatitis. The cases we have seen have been mild.

We have had a large experience with TNT poisoning, particularly from the standpoint of blood changes, which is not under discussion today. But dermatitis, with us, is a very minor problem. Our loss of time from dermatitis is practically nil.

QUESTION: Doctor—in my section of the country we have a tent factory. The employees sew the pup tents together, and I notice a lot of allergic dermatitis has developed from that. I should like to know what chemical produces that.

DR. CONE: I do not know.

THE CHAIRMAN: I will ask Dr. Gant to answer that question for you, if he can.

DR. GANT, closing the discussion: I wish to thank Dr. Murrell for his kind remarks and to thank the other gentlemen who have discussed my paper.

The Dermatoses Section has the records of some 80 plants in the United States and Canada that manufacture and handle explosives. The records cover several thousand cases. We know that "hardening" does occur in the large majority of cases of allergic occupational dermatitis who stay on the job. As an example, about eighteen months ago all the munitions factories had an abundance of munitions and laid off a great number of people. When those people returned to work there was a sharp increase in the number of cases of dermatitis, but after a short time and after continuing work, the number of cases greatly decreased.

As to tenting materials, they are being treated with various finishes. Most of these compounds are antimildew agents, waterproofing substances, and in some instances flame-proof chemicals. A great many of the antimildew compounds are primary skin irritants when used in strong concentrations, and many of them are sensitizers in lower concentrations. We have had no complaints of dermatitis from the flame-proofing chemicals. One of the waterproofing chemicals has caused an outbreak of dermatitis. It was Japan Wax obtained from the plant Rhus vernicefera, member of the same family as poison ivy. In the particular instance cited by Doctor ——, I cannot tell which of these chemicals may be causing the dermatitis as I do not know the materials with which the tenting was treated. If Doctor —— wishes to find out what chemicals are used in the tenting in question, an inquiry directed to the Office of the Quartermaster General, War Department, may give him the information.

Penicillin Aids Closure of Bedsores.

Successful closure of bedsores was carried out with the aid of penicillin administered by injection and locally, Lieutenant Colonel John D. Lamon, Jr., and Captain Eben Alexander Jr., Medical Corps, Army of the United States, report in the February 17 issue of *The Journal of the American Medical Association*. The wounds were closed with sutures of cotton.

They say that much has been published concerning the care and healing of bedsores in recent years, but, as far as they can determine, no reports of the successful closure of these sores have so far appeared in the literature.

The case they describe was that of a soldier with three bedsores on his back, all of them infected. To speed the healing of the sores so that a necessary operation could be done on his spine near one of them, penicillin was injected into a muscle for twenty-four hours. Then the sores were carefully excised, penicillin injected into the tissues around each wound and they were closed with sutures. Ten days later the sutures were removed from the wounds which remained clean and free of infection. The operation on the spine was done three weeks after closure of the bedsores.

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GAS GANGRENE—REPORT OF A SEVERE CASE WITH RECOVERY*

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C. E. HOLDERBY, M.D.,
and
M. L. HORNE, M.D.,
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There are five types of gas gangrene classified by Eliot, Ellsworth, and Easton[1] as follows:

1. Localized anaerobic infection of wound.
2. Slowly spreading anaerobic infection of a wound.
3. Group type—where single muscle or a group of muscles is attacked.
4. Massive type—where a whole segment of a limb is attacked.
5. Fulminating type—where an overwhelming infection and toxemia usually results fatally in 24-48 hours.

Many of the cases reported in the literature which have responded so dramatically to roentgen therapy apparently fall into the category of one or the other of the first three types, classified above, which, comparatively speaking, are relatively benign. Jeffrey,[2] with the Royal Army Medical Corps, in 1940, describes the frequent occurrence of one of the localized forms with little or no general disturbance. He reported that such cases responded readily to simple incision and drainage of the wound.

In civil and industrial practice the occurrence of gas gangrene is by no means a rarity. However, survival of a case of the fulminating type with massive infection and overwhelming toxemia is sufficiently infrequent to arouse considerable interest.

The case herein described was of the fulminating, toxemic variety, and presented unusual extension of the associated skin discoloration and cellular crepitations to the region of the clavicle on the side of the affected lower limb where the process started. In none of a series of 17 cases reported by Eliot *et al.*,[1] or in a series of 43 cases reviewed by Eliason, Erb *et al.*,[6] was any mention made of the spread of crepitations higher than the iliac crests in cases where the lower limb was the seat of infection. According to Mullally,[3] the upper limit of the gas precedes the upper limit of the gangrene by several inches, while, conversely, the gangrene of muscle extends higher than that of the skin. These precepts thus serve to emphasize more vividly the massive and seemingly overwhelming type of infection with which we were dealing.

The armamentarium of therapy for gas gangrene and clostridium Welchii infections is voluminous. Perusal of the literature revealed that sulfonamides, muscle excision, roentgen rays, anti-serum, hydrogen peroxide, zinc peroxide, and amputation are either alone or in combination the prevailing modes of therapy.

It has been ably demonstrated experimentally by Hawking and Frank,[4] and by Bonnin and Fewner[5] that the sulfonamides have a definite bacteriostatic effect on the clostridium Welchii.

Muscle excision is probably not without merit in the first three types of gas infections described above. It is difficult to realize its practicability in the fulminating massive infection. Further, Jeffrey[2] states that he never saw a case of gas gangrene of the lower limb survive where radical excision had been carried out, and amputation should be considered in every such case.

The use of roentgen therapy is productive of extreme enthusiasm on one hand and disappointment on the other. It is only just to mention that some apparently spectacular results have been reported with the use of this agent, although in many instances it has been utilized in combination with other modes of therapy.

In a review of 43 cases, Eliason, Erb and Gilbert[6] admit that the value of serum as a prophylactic has not been shown, although they do conclude that serotherapy itself has established its value. Nevertheless, the literature reveals that its use in the average civil or industrial case has provoked only a minimum of enthusiasm.

Anemia is by far the most common associated symptom of this disease[1]; Eliason *et al.*,[6] call attention to the marked anemia produced in clostridium Welchii infections. Thus, the value of frequent transfusions of whole blood cannot be over-estimated.

The peroxides, hydrogen and zinc, by their abil-

*From the Medical Department of the Newport News Shipbuilding and Dry Dock Company, Newport News, Virginia.

Read before the Warwick County Medical Society, April, 1944.

ity to liberate oxygen, prevent the multiplication of anaerobic organisms. This valuable therapeutic measure should be utilized in gas infections whenever possible.

Our brief experience with penicillin, which it was our good fortune to obtain for treatment of avirulent hemolytic staphylococcus infection following hip disarticulation and closure of the guillotine amputation, revealed its therapeutic efficiency in treatment of staphylococcic infections. Most noteworthy was a sharp and sustained drop in the percentage of polymorphonuclear neutrophilic leukocytes concomitant with the administration of the penicillin. So far as we know similar alterations in the blood picture during this type of therapy have not been reported.

In view of the fact that no blood dyscrasias have been reported due to penicillin thus far, it seems that further investigation of this neutrophilic alteration would be of interest.

CASE REPORT

D. S., a white male machinist's helper, caught his leg in a boring mill on January 29, 1944, and sustained an extensive laceration of his left lower extremity. He was promptly transported by ambulance from the scene of the accident to the company hospital.

Examination revealed a moderately shocked 21 year old white male in considerable pain. The left leg was lacerated on its lateral aspect extending from mid-thigh above to the region of the lateral malleolus below, penetrating the fascia lata above and fascia of the leg below, with herniation of all the immediately subjacent muscle bundles. At the region of the knee, the laceration entered the popliteal space on the postero-lateral aspect of the joint where there was considerable tearing of the deeper tissues. Except for the area in the popliteal space, the entire laceration was of the "incised" type with minimal tearing of superficial and deeper structures. There was little, if any, bleeding of arterial origin apparent at the time and no visible evidence of contaminating material contained within the wound.

After preliminary treatment for shock with good response, the margins of the wound were infiltrated with 1 per cent novocaine solution, and closure in layers was accomplished with no marked difficulty. Three soft rubber drains were left *in situ*.

After hospitalization, a prophylactic dose of combined tetanus and gas bacillus antitoxin was given. Subsequent laboratory work revealed the hemoglobin and red blood cells to be 64 per cent, and 3,500,000, respectively. On the evening of the day of hospitalization, his pulse became increasingly more thready and finally imperceptible with blood pressure reading of seventy (70) systolic, the diastolic pressure being undeterminable. Immediate intravenous infusion of two (2) units of blood plasma resulted in a gradual but persistent improvement and the systolic pressure held to a level of 100-130. On the following day, he reverted to a similar state of pallor, profuse perspiration and thready, rapid pulse and was given another unit of blood plasma, but with no visibly beneficial effect on this occasion. He became febrile with a temperature range of 102°-105.4°F., and sulfadiazine therapy orally in full therapeutic doses was instituted.

On the third hospital day transfusion of 500 cc. (five hundred) of citrated whole blood in addition to another unit of plasma was given. The hemoglobin and red cell count were 28 per cent, and 1,510,000 respectively. The blood sulfadiazine level was 4.4. The patient was in a disoriented, irrational, toxemic state.

On the fourth hospital day inspection of the left leg revealed a massive, varied colored swollen limb. The leg presented a bluish, red, black discoloration of varying shades extending to the left lower quadrant of the abdomen, where the discoloration faded to a pinkish light bronzed hue. The entire scrotum was edematous and its left side was dark blue in color. The limb was covered at varying intervals with large emphysematous blebs with foul gaseous odors of decomposition escaping from those that were ruptured. Subsequent cultures from the bleb fluid were positive for B. Welchii; later, repeated blood cultures were negative.

The patient's general condition at this time could be called moribund. The severe toxemia, hyperpyrexia, and degree of exsanguination precluded any possibility of an amputation. The daily transfusions and full therapeutic doses of sulfadiazine were continued. The entire wound was laid open. The underlying muscles (varying in color from yellow to greenish-black and covered with tenacious, foul grayish-yellow exudate) were stripped from the fascia and multiple perforated rubber tubes were inserted through which copious hydrogen peroxide irrigation was carried out every two hours.

On this regime of daily transfusions of citrated whole blood, sulfonamides orally, peroxide irrigations of the wound, and measures to maintain the

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patient's nutrition, his general condition was surprisingly and markedly ameliorated. After the fifth blood transfusion his hemoglobin, red count, and white count were 63 per cent, 3,410,000, and 13,000, respectively. The blood sulfadiazine level reached 7.8.

Particularly noteworthy at this time was the extension there was a profusion of crepitations and brawny swelling palpable over this region. Subsequently two (2) incisions were made on the anterolateral aspect of the left side of the chest wall through the skin and subcutaneous fat revealing the underlying muscle to be normal in appearance. Several days therafter there was an abundance of sero-

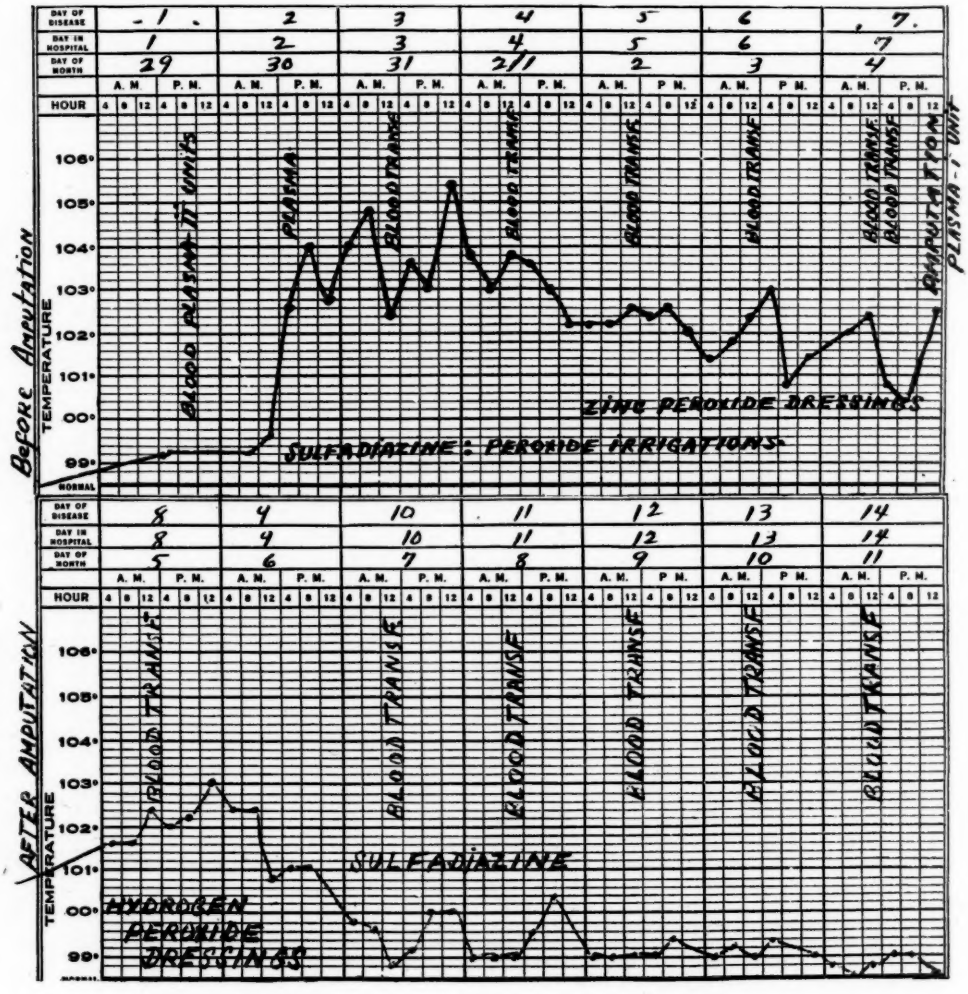

Figure I.

tension of the discoloration (which in this situation was of a reddish brown hue) over the left side of the abdomen and the anterior, and anterolateral aspects of the left side of the chest wall almost to the level of the clavicle. Concomitant with this extension there was a profusion of crepitations and brawny swelling palpable over this region. Subsequently two (2) incisions were made on the anterolateral aspect of the left side of the chest wall through the skin and subcutaneous fat revealing the underlying muscle to be normal in appearance. Several days therafter there was an abundance of sero-sanguinous drainage. This released considerable tension, and much pain and discomfort, which had hitherto been referable to this region, was markedly alleviated.

By the seventh hospital day there was such per-

sistent and sustained improvement in spite of the unusual extent and severity of the local gangrenous condition that a high Guillotine amputation was done under open drop ether anesthesia. A blood plasma infusion was started while the patient was on the table.

The immediate post-operative condition appeared very favorable, and there was minimal, if any, evidence of surgical shock. As shown by the graphic comparison (Figure I) the temperature curve over the next ten day period gradually leveled off and approached normal. Concomitant with this comparawas possible to ascertain, were considered to be free of infection. Thorough medical check-up revealing entirely negative findings, the optimum time for closure of the stump was thought to be at hand.

Accordingly, under gas-oxygen-ether anesthesia, the proximal bone stump which measured no more than 7.5 cm. in length was dissected free of soft parts and disarticulated. The skin was then closed under little tension except for a small opening about the diameter of a small lemon situated in the center of the anterior aspect of the stump which could not be closed.

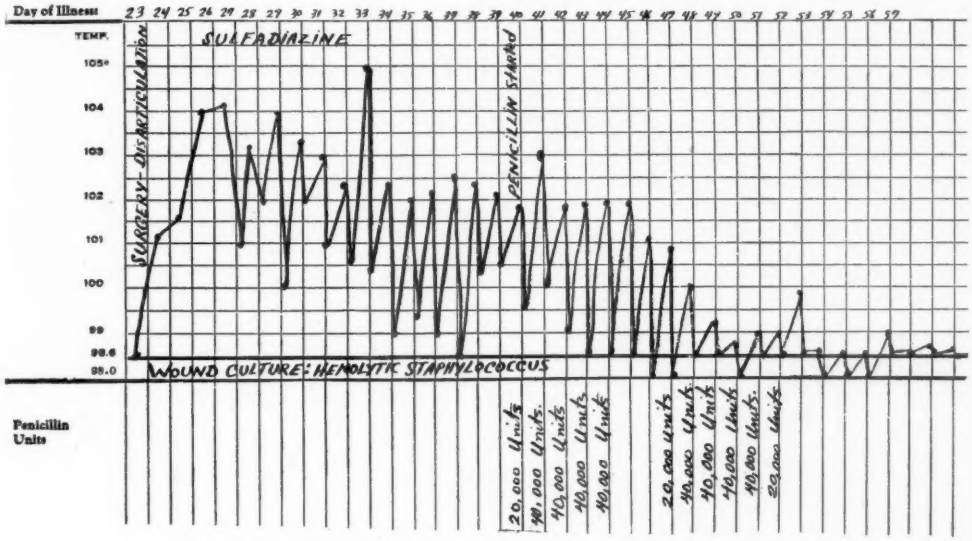

Figure II.—Temperature curve before and after penicillin therapy.

tively afebrile state the exposed muscle bundles rapidly assumed a normal, "beefy" appearance. By the eleventh post-operative day they were more or less completely covered by healthy granulation tissue. Daily hydrogen peroxide irrigations and wet peroxide dressings were applied to the exposed stump.

The daily blood transfusions and sulfadiazine were discontinued (hemoglobin 93 per cent, R.B.C. 4,236,000). The edema and discoloration of the scrotum and chest wall gradually disappeared, although the crepitations palpable under the skin of the chest persisted for a considerable time thereafter.

By the twenty-fourth post-operative day, the muscle bundles and skin of the stump, so far as it

The operation was prolonged by the necessity of removing much muscle tissue and, during the latter part of this operative procedure, the patient lapsed into what appeared to be a state of irreversible shock. In conjunction with routine shock therapy, three units of blood plasma were given in quick succession and at a rapid rate. After approximately two hours there was some response. The pulse now became perceptible and a systolic pressure of 60 was obtained. On the evening of the same day there was somewhat less apprehension and he seemed to have definitely passed the state of extreme vascular collapse.

Starting from the first post-operative day he was again febrile, exhibiting a septic type temperature

curve, usually reaching its peak of 102°F.-104°F. in the afternoon or late evening. Coincident with this there was a gradual but progressive fall in the hemoglobin and red blood cell levels until by the fifth post-operative day they were 45 per cent and 2,800,000, respectively.

Subsequent examination of the stump revealed that the wound had more or less completely broken down with copious purulent drainage exuding from several sinus like tracts. Smear and cultures of the exudate revealed a stain of hemolytic staphylococcus. Roentgenograms of the pelvis revealed no bony pathology. Sulfadiazine, in full therapeutic doses, was again started and whole blood transfusions at 48-hour intervals were given with little, if any, effect on the septic process. Repeated daily blood cultures were negative. The patient was again running a downhill course with no noteworthy therapeutic response to the sulfadiazine; accordingly, the drug was discontinued.

On the seventeenth post-operative day penicillin therapy was instituted, the method of administration being by continuous intravenous drip in pyrogen-free normal saline solution. The apparatus was so regulated that in each 24-hour period 40,000 units of penicillin and 2,000 c.c. of normal saline was not exceeded.

After a total of 180,000 units of penicillin by the intravenous route over a period of 4½ days (see Figure II). There was a definite, progressive fall in the usual evening temperature peak, wound drainage was considerably less, and the patient was improved generally.

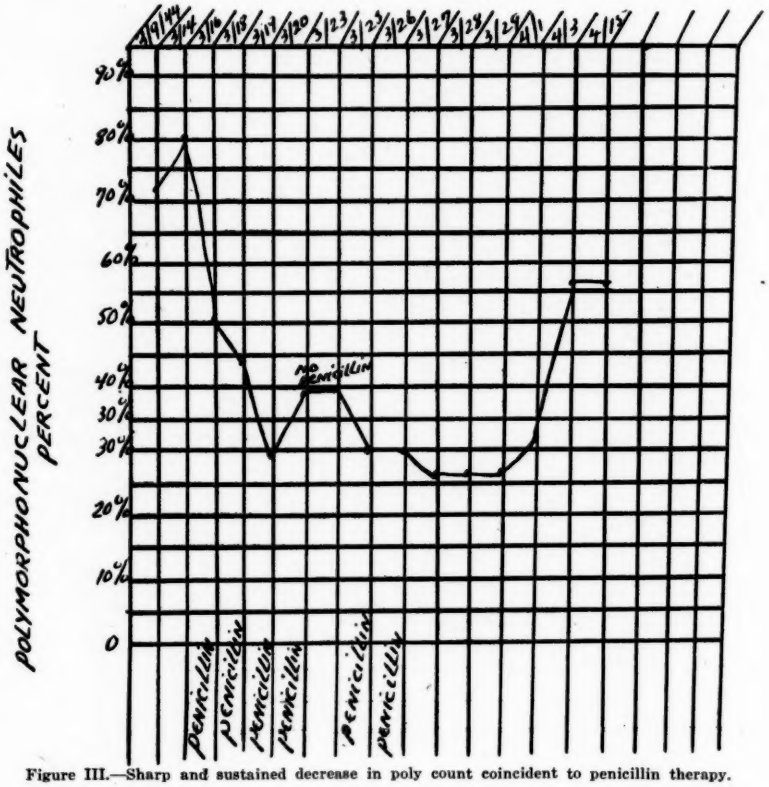

Figure III.—Sharp and sustained decrease in poly count coincident to penicillin therapy.

During the penicillin therapy daily blood studies revealed a rather progressive fall in the polymorphonuclear neutrophile count from 80 per cent to 40 per cent, and on the fourth day of penicillin therapy to 29 per cent. The lymphocyte count was proportionately increased. There was not, however, any notable decline in the total white blood cell count, a level of 9,000-12,000 cu. mm. existing during this time. This, of course, seemed to preclude

the existence of a true agranulocytosis (malignant neutropenia). A heterophile test revealed no presumptive evidence of infectious mononucleosis, and the patient's general and local condition were better than at any time since the hip disarticulation and closing operation had been performed (see Figure III).

Notwithstanding, the penicillin therapy was discontinued for two days, during which time crude liver extract, a small stimulating transfusion and pentnucleotide were given, the latter as "prophylaxis" against what we thought might have been an incipient agranulocytosis.

Another 200,000 units of penicillin were given by the same method during the next five days, and on the third day of this second course of penicillin the patient became afebrile and from that time on progressed smoothly towards eventual, uneventful recovery.

Seven days after cessation of penicillin therapy the white blood cell count was 9,800 with 56 per cent polys and 44 per cent lymphocytes. The R.B.C. and hemoglobin levels were within normal limits. Wound drainage was minimal and healthy granulations began to appear.

By the thirty-fourth post-operative day only a small area of the wound remained open, and this looked clean and healthy.

On the sixty-fifth post-operative day the patient was discharged from the hospital. He was well.

SUMMARY AND CONCLUSIONS

1. A severe case of gas gangrene with recovery is reported.
2. The favorable effects of large doses of the sulfonamides is worthy of attention. In this case the action was definitely bacteriostatic.
3. As in all cases of gas gangrene, the severe anemia in this case was one of the outstanding, accompanying symptoms.
4. The frequent large transfusions, while apparently beneficial in this case, may have been a factor in the slow recovery of the blood picture through depression of the hemopoietic centers.
5. Attention is drawn to the decided shift in the differential picture, coincident with the use of penicillin. There was no abnormal change in the total leukocyte count.
6. In this case penicillin was not used in the treatment of the gas gangrene but in the treatment of a subsequent hemolytic staphylococcus infection.
7. Progressive recovery started with use of the penicillin.

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Film on Reconditioning of Amputees Released for Public Showing.

"Swinging into Step," a motion picture which shows how soldiers who have lost arms or legs are prepared by the Army Medical Department not only for their return to civilian life, but for their "come back," has been released for public showing. Originally produced as a restricted "training film," for showing to the men, themselves, as soon as possible after they are wounded, this inspiring picture is now available to clubs, schools and other organizations as well as commercial movie houses. Requests should be directed to the Public Relations Officer of the nearest Army hospital.

The War Department decided to release this film not only because of its informative value but to encourage a proper attitude on the part of the public toward disabled soldiers. The film is also of interest to medical men because of its portrayal of the Army Reconditioning Program.

XUM

THE TREATMENT OF CONGESTIVE HEART FAILURE*

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I think the subject of congestive heart failure, or myocardial insufficiency, is one of the most interesting in the entire practice of medicine. To me, its fascination lies in its improvability and the almost dramatic results that can, at times, be obtained in its treatment. A great number of conditions seen by internists are slow to respond to treatment and so it is a pleasure to handle a syndrome which responds quickly. Certainly congestive heart failure is no unusual condition and I imagine that all of you gentlemen, unless restricting yourselves to certain specialities, have one or more patients in an active stage at the present time. Congestive heart failure develops eventually in more than half of all individuals with organic heart disease and in a few individuals without organic heart disease but with sudden abnormal strain, as in the case of prolonged and extreme paroxysmal tachycardia in infancy.

PHYSIOLOGY

Strain upon a diseased heart impairs its already below par efficiency so that it is unable to maintain a satisfactory circulation. The myocardium often weakens long before gross signs of congestion appear. Left ventricular failure is the most common type of heart failure. When this type of failure occurs from the constant severe strain of hypertension, dilatation is superimposed on the already hypertrophied ventricle. It is unable to force from its chamber the blood received from the right ventricle. The left auricle dilates, the lung vessels become engorged and the pulmonary arterial pressure is greatly increased. The right ventricle must increase its activity to make up for the added burden thrown upon it. If the right ventricle fails because of left ventricular failure, mitral stenosis or pulmonary fibrosis, it is not able to pass on all the blood it receives from the lungs to the left side of the heart.

Occasionally the heart fails when both ventricles are affected from some common strain such as severe rheumatic carditis. Then there is congestion in both the pulmonary circuit and the systemic veins. Certainly the primary evidence of advancing weakness in either ventricle is congestion behind that particular ventricle—in the lungs in the case of the left ventricle, and in the great veins and the liver in the case of the right. Of far less significance are any manifestations of failure of the circulation in front of the weakened ventricle (shock).

These physiological factors are briefly mentioned because they are of the utmost importance in treatment and prognosis. It is insufficient just to make a diagnosis of myocardial insufficiency. The underlying factor or factors should be determined. If chronic hypertension or mitral stenosis is causative, the outlook is usually better, as many of these patients can be controlled for many years with proper therapy. In contradistinction, if syphilitic aoritis or coronary occlusion is causing the failure the prognosis is considerably poorer.[1] If paroxysmal dyspnea is present the outlook is poor as these patients usually do not survive long.

TREATMENT

I would divide the treatment of congestive heart failure into three parts: 1. Rest. 2. Drugs. 3. Other measures.

1. REST—This is a cardinal therapeutic measure in heart failure and often it alone suffices to restore compensation. A severe grade of insufficiency demands absolute rest; this patient should be fed and moved. He should be in the position in which he is most comfortable and this usually will be propped in bed on a high angle or in a chair. Remember that the recumbent position is not a restful one so far as the heart is concerned.

I would like to call to your attention an article in a recent issue of the *Journal of the American Medical Association* by Dr. Samuel Levine, of Boston, regarding some harmful effects of recumbency in heart failure.[2] He stresses the fact that venous return is markedly facilitated by recumbency, thus increasing the strain upon the right side of the heart. If the left ventricle is so weak that it cannot keep pace with the increased output of the right ventricle, pulmonary congestion and resultant breathlessness may actually increase. Likewise, he emphasizes the fact that a disappearance of edema of the feet and legs may merely mean a shift of fluid to

*Read before the Wise County Virginia Medical Society, Norton, September 22, 1944.

the back or buttocks, production of a hydrothorax or an increase of pulmonary congestion. One point he makes which is very interesting is that fluid in the legs is unsightly but does comparatively little harm, whereas fluid in the lungs is a dangerous handicap.

Milder degrees of insufficiency do not require absolute rest, though rest in bed for a few days or longer produces good results. The patient who has insufficiency with moderate exercise should be restricted to those activities which do not produce dyspnea and related symptoms.

Many persons with mild congestive failure continue to work through necessity or inclination. Their activities can be helpfully controlled. The housewife with mitral stenosis can lie down for an hour or so during the day. The office worker can rest over the week-end. Individual factors must be evaluated and suggestions made on this basis. It is folly to insist that a hard-driving business man with hypertension give up his work completely; in the first place, he probably will not do it, and, secondly, he will worry to such an extent that he will be harmed more than helped by rest.

2. DRUG THERAPY—*Digitalis* is, of course, the mainstay in the management of congestive failure and is unquestionably the most important single drug that we have for this purpose. It is still a mystery as to how the active digitalis bodies cause such remarkable changes in the muscular contraction of the heart. The main action is on the heart muscle fiber and it brings relief by virtue of its ability to increase the force of myocardial contraction. When digitalis increases the force of contraction in the failing heart the ventricles empty more completely. The heart becomes more capable of caring for an increased venous return and the venous pressure approaches normal.

Besides increasing the force of contraction, digitalis also increases the mechanical efficiency of the heart muscle; for a given amount of work done, less oxygen is consumed.[3] The present conception of the action of digitalis minimizes the importance of cardiac slowing as a factor in the beneficial effect of the drug in heart failure. Improvement is noticed in many cases before significant slowing is observed. It is fortunate that the quieting effect of digitalis on the rapid rate of failing hearts is accomplished through the basic mechanism of improved muscular ability; otherwise, the results would be less good. Where auricular fibrillation is a component of heart failure, the drug acts directly on the conduction system and reflexly on the vagus to block auricular impulses. Thus the ventricle which has been beating rapidly and irregularly becomes slower and more regular.

Full doses of digitalis cause a decrease in the diastolic size of the heart as observed in teleoroentgenograms, which make for a more efficient heart when it is dilated in heart failure.

The diuretic action of digitalis is entirely dependent upon the improvement in the circulation: thus there is no diuretic action *per se*. As venous pressure is reduced, edema fluid is restored to the blood, thus allowing its excretion. Renal function is also improved because of relief of vascular congestion in the kidney. In spite of the fact that digitalis is efficient in mobilizing edema fluid, about 50 per cent of patients with myocardial insufficiency will require specific measures to increase diuresis.

It is important to understand the unitage and assay of this drug. One U.S.P. digitalis is the equivalent of .1 gm. of the International Standard digitalis powder. Digitalis prepared by the various drug companies is not assayed on the same basis. It is best to become familiar with one or two reliable brands and to call for these on prescriptions rather than indiscriminately to use various brands. Under-dosage or over-dosage can be avoided in this manner. The safest method of administration is by use of a reliable powdered leaf or tincture. Various digitalis substitutes or fractions have no advantage over these galenical preparations. Strophanthus has no advantage over digitalis; its absorption is unreliable and frequently produces diarrhea. It is important also to remember that these preparations are relatively inexpensive, and this is important as the drug frequently must be taken over a long period of time.

Digitalis is readily absorbed from the intestinal mucosa and exerts its full action on the heart within six hours. Electrocardiographic evidence of initial myocardial action is detectable within two hours following a large oral dose of the drug.[4] It is also easily absorbed from the rectal mucous membrane and this route of administration can be used if the oral route is not feasible. Digitalis preparations are painful when given subcutaneously or intramuscu-

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larly and absorption is erratic from these sites.

Thus, the oral route is preferable and rectal second in value. If the rectal route is used, the diluted tincture or water soluble preparations should be selected. A cleansing enema should be given and the digitalis should follow this. The dosage and interval between doses are the same as for oral administration.

In emergencies, when minutes rather than hours are of importance, the intravenous route may be used. Water soluble purified digitalis fractions or strophanthus glycosides (ouabain) may be given very slowly and in carefully calculated doses by vein. The total dose is 1 mg. divided into four doses at two hour intervals.

It should be known if digitalis has been given at an earlier time. Since the excretion of the drug is slow and its action continues over a period of several days to several weeks after it is discontinued, it is important to know how much digitalis has been given and over how long a period before additional doses are given.

For initial digitalization of a moderately or severely ill patient with congestive failure *large doses* should be given so that optimal effects are obtained within twenty-four to forty-eight hours. This total amount will represent 1 to 1.5 gms. (15-22 gr.) of the powdered leaf or 15-22 cc. of the tincture (U.S.P. XII). This can be divided into equal doses and given every four to six hours. If the failure is severe and no digitalis has been given within two weeks the total amount can be given in three doses at six hour intervals. Following this, the dosage is dropped to .12 gm. one to three times daily until the optimum maintenance dose is obtained. For milder cases under close observation .1 gm. three times daily may be used. Age is not a significant factor in digitalis dosage.

For maintenance of best results a sufficient amount must be given to replace that which is destroyed or eliminated by the body and certainly there is no hard or fast rule for calculating this. It has been thought by some investigators that approximately .12 gm. of the leaf or 1.2 cc. of the tincture was lost daily, but there are such wide variations in this that a replacement dosage of the same amount may be too small for one patient and too large for the next. It may be said that most patients require .1 gm. of the leaf or 1 cc. of tincture once or twice daily.

In the final analysis, however, the dose is that which will maintain the heart muscle at its best efficiency and this is found only by close and careful observation of the patient.

Morphine—This drug is of definite value in the relief of dyspnea, pain and coughing which may be prominent factors in congestive failure. It is frequently very necessary in paroxysmal dyspnea to terminate an attack and produce sleep. I have recently used demerol in patients with congestive failure. This is a new synthetic drug related to atropine in chemical structure but having the analgesic effect of morphine. Satisfactory relief of dyspnea has been obtained and some of the objectionable side actions of morphine have been avoided. This drug does not have the marked depressant action of morphine on the respiratory centers and consequently may be safer than morphine in elderly patients. The dose is 50-100 mg. given intramuscularly.

Diuretics—The drugs having the most potent action are the mercurials. Mercury was a component of the famous Guy's Hospital pill which contained calomel, squill and digitalis. Calomel, however, has been largely displaced by the organic mercurial drugs. Merbaphen, or novasurol, was originally introduced for antiluetic treatment but was found that its diuretic action was more potent than its luetic action. Salyrgan was later introduced and found to be superior by reason of lessened toxicity. Other mercurials are mercupurin and mercurin and these are of equal value and toxicity as salyrgan. These mercurials probably act by preventing or reducing tubular reabsorption of water.

The diuretic action usually begins two to three hours after administration and persists for twelve to twenty-four hours. Fluid output is greatest in the early stages and the drug is preferably given in the morning so that urination during the night will not interfere with sleep. In markedly edematous individuals the urine output may increase to several liters. The drug may be repeated in a few days' time. Tolerance is not usually developed and salyrgan may be used over a period of years. If acid forming salts are given prior to the use of the mercurial, the action is potentiated. In the presence of kidney damage the mercurials should be avoided.

The xanthine group of drugs—caffeine, theophylline and theobromine—are sometimes of value be-

cause of direct myocardial stimulation. They do have a valuable place by virtue of a diuretic action in cardiac edema and in paroxysmal dyspnea. In the latter condition, relief is obtained by myocardial stimulation, relaxation of the bronchial musculature and lowering of venous pressure. Aminophyllin (theophylline with ethylene diamine) is the preferable drug and should be given intravenously. The dose is .25-.5 gm. suitably diluted. I feel that ampules of this drug are as necessary as is morphine to have for emergency heart patients. These drugs are also of value in cardiac edema and may be used by mouth. As you know, there are numerous preparations and combinations. The diuretic response is less than that obtained by the mercurials but they may be used in the presence of renal insufficiency where the mercurials are contraindicated.

Other diuretics which will not be considered in detail are acid forming salts, glucose, sucrose, urea, sodium chloride and potassium salts.

Oxygen—Inhalation of this element is at times very necessary in combating acute failure and in tiding patients over certain complications. In paroxysmal dyspnea it is of definite value in alleviating these distressing symptoms. It is probably more effective when combined with helium.

3. OTHER MEASURES—*Diet* is a factor of importance in the management of congestive failure and the general condition of the patient must be the guide as to the food and fluid intake. Small quantities of easily handled food divided into several small feedings daily will throw less strain upon the circulation.

I feel that the Karrell diet which limits the patient's intake to approximately a quart of milk daily is of value for a few days. With improvement in the patient's condition, the diet is increased but large meals should always be avoided. Accessory food factors should be given if indicated.

Venesection is occasionally a valuable procedure in a patient with severe congestive failure. It may relieve pulmonary edema and lower high venous pressure in patients who have not responded to other methods of therapy.

Another procedure which may be helpful temporarily is the application of blood pressure cuffs or tourniquets to the extremities so that venous return is cut off and thus much blood is sidetracked. This may be helpful in pulmonary edema. There is a hazard here of phlebitis with a resultant pulmonary embolism.

SUMMARY AND CONCLUSIONS

1. Congestive heart failure is a frequent and serious condition encountered in medical practice.
2. Physiological factors are mentioned which are of importance in the management of this condition.
3. Treatment is considered from the standpoint of rest, digitalis therapy and other measures, with emphasis upon rest and digitalis, as these two factors are of paramount importance in bringing relief to these patients.

REFERENCES

1. White, Paul D.: Heart Disease, Third Edition, page 763.
2. Levine, Samuel A.: Some Harmful Effects of Recumbency in the Treatment of Heart Disease, *Jour. A. M. A.* **126**:80-84, September 9, 1944.
3. Goodman and Gilman: The Pharmacological Basis of Therapeutics, page 506.
4. *Ibid.*, page 526.

203 Medical Center Building.

Combat Badge for Medical Personnel.

A special badge has been authorized for Medical Department personnel who daily share with the infantry the hazards and hardships of combat. Made of silver, the Medical Badge is elliptical in shape with the caduceus and the Geneva Cross superimposed on a litter surrounded by a wreath of oak leaves. It is to be worn on the left breast above decorations and service ribbons.

The badge was established in recognition of "the important role being performed by medical personnel on duty with infantry units, especially infantry battalions." Enlisted and officer personnel below field grade (major) and regimental surgeons regardless of rank are eligible for the badge if they have seen combat service with the infantry since December 7, 1941.

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PUBLIC HEALTH

I. C. RIGGIN, M.D.,
State Health Commissioner of Virginia

The report of the Bureau of Communicable Diseases of the State Department of Health for February, 1945, as compared with the same month in 1944, and for the period of January through February, 1945, compared with the same period in 1944, follows:

	Feb.-1945	Feb.-1944	Jan.-Feb.-1945	Jan.-Feb.-1944
Typhoid and Paratyphoid Fever	6	4	10	9
Diarrhea and Dysentery	151	216	393	335
Measles	191	3,018	251	4,008
Scarlet Fever	567	302	926	508
Diphtheria	36	27	62	50
Poliomyelitis	5	0	9	1
Meningitis	36	88	59	157
Undulant Fever	1	2	3	6
Rocky Mountain Spotted Fever	0	1	0	1
Tularemia	8	1	10	8

PENICILLIN THERAPY IN GONORRHEAL INFECTION

Evidence is accumulating that sulfathiazole is becoming progressively less effective in the treatment of the individual infected with gonorrhea than when it first became available for general distribution. Much the same experience is being observed with the other sulfonamides in the treatment of gonorrhea. Early reports on the use of these drugs gave a "cure" rate of between 62 and 85%. Late reports reveal a "cure" rate of as low as 16%. The reasons given by the many investigators for this phenomenon are too varied to allow for discussion here.

The use of penicillin in the therapeutic management of the gonorrheal infection appears to be the new hope upon the horizon. However, if an experience such as that with the sulfonamides is to be avoided every physician treating a case of gonorrhea with penicillin must take cognizance of the fact that it may be possible to produce epidemics of the resistant strains of the organism through inadequate treatment with the drug.

The total dosage of penicillin used by the various investigators has ranged from as low as 60 thousand oxford units to as high as 300 thousand oxford units. Although it cannot be stated as a certainty at the present time, there is accumulating evidence that a smaller total dosage than 150 thousand oxford units should not be used in the treatment of the individual infected with gonorrhea.

The following treatment regimen appears to be the most effective at the present time. The total dosage of penicillin consists of 150 thousand units; 20 thousand units are given every 3 hours intramuscularly except for the last injection, which consists of 10 thousand units, thus making the total of 150 thousand oxford units. The fact that the three hour regimen of drug administration is distributed over the entire 24 hour period generally makes it necessary to provide some type of hospitalization. The efficacy of bed rest in the treatment of gonorrhea is well known. For these reasons this method of management is deemed the most efficient at the presenet time.

Inasmuch, however, as there are many patients in whose case hospitalization is not available or practicable, treatment schedules which can be used on an ambulatory basis have been sought. At the present time the following two schedules appear to have yielded fairly adequate results:

The first schedule calls for the administration of 30 thousand units of penicillin at each of the following times: 9 A.M., 11:30 A.M., 2 P.M., 4:30 P.M., and 9 A.M. the following day.

The second schedule, which may be completed in seven and one-half hours, consists of 35 thousand units at 9 A.M., 35 thousand units at 11:30 A.M., 40 thousand units at 2 P.M., and 50 thousand units at 4:30 P.M.

If adequate dosage of penicillin is used over a sufficiently long treatment period, and if the treated cases are carefully observed for failure and those failing are treated with larger doses of penicillin administered over longer periods of time it is hoped that the loss of therapeutic efficiency experienced with the sulfonamides in the treatment of gonorrhea may be avoided.

IMMUNE SERUM (GAMMA) GLOBULIN TO BE RELEASED TO PHYSICIANS

The State Health Commissioner has been notified by the Medical Director of the American Red Cross that gamma globulin is now available for distribution to physicians, hospitals and clinics throughout Virginia. This material, a by-product of the Amer-

ican Red Cross blood plasma bank which has been declared surplus by the United States Navy, is to be returned to civilians through the State Health Departments. There is no charge for this biological product; it will be distributed free to physicians and cannot be sold.

Gamma globulin administered intramuscularly is used for the prevention or modification of measles at the discretion of the physician after a child has been exposed. The potency of this product produced in the war effort is said to be many times as great in immune substances as flood fractions formerly used to prevent or modify measles.

Recently a quarterly supply of the gamma globulin was ordered. This material accompanied by directions will be sent to physicians upon request.

CASE REPORT OF MATERNAL DEATH

MATERNAL HEALTH COMMITTEE,
MEDICAL SOCIETY OF VIRGINIA

This white, 29 year old multipara consulted her doctor in the sixth month of her pregnancy. She had four children and there had been no complication in either her pregnancies or labors. At a previous pregnancy her blood Wassermann was negative. In the present pregnancy her blood pressure had been consistently low and she was undernourished. Six weeks before term she developed ulcers on arms and legs. The lesions were punched-out and showed little tendency to heal. They were treated with ammoniated mercury and aluminum acetate.

When the patient went into labor she became cyanotic. Her temperature was found to be 104, pulse 130, respiration 45. There was a consolidation of the left lung. Labor was easy and no anesthetics were given. She was given 1 cc. of pituitrin after the completion of the third stage, and an ampule of digifolin. A nurse was left with the patient and sulfapyridine was started. The cyanosis deepened and the patient died six hours postpartum.

COMMENT

Some of the members of the Committee considered this to be a medical death, as indeed it was, but under the rules of the census office it must be classed as an obstetrical death. The pregnancy and labor, no doubt, hastened the exitus. Pneumonia and pregnancy are a bad combination, as those who practiced in the influenza epidemic of 1919 well know. If a pregnant woman with pneumonia goes into labor, the chances for her recovery are much less. Yet, the tendency is to induce labor when the patient contracts an acute infectious disease. What the reasoning is, is not clear, but there is no doubt as to the result. In the influenza epidemic the mortality, when this was done, was practically 100 per cent.

In the case under consideration, the only criticism was in the prenatal care. The patient was undernourished and had punched-out ulcers on her arms and legs. There is no record of a Wassermann test in the present pregnancy, and the record does not show that any effort was made to improve her condition of undernourishment.

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MILITARY MEDICINE

Virginia Doctors in Service
Supplement 9

This is the Ninth Supplement to the list of Virginia Doctors in Service, the original list having been published in July 1942, with Supplements in September and October 1942, January, April and September 1943, and February, June and October 1944. Names are given in alphabetical order with home addresses in view of changes in location and rank.

The MONTHLY will appreciate being advised of omissions that they may be included in a future supplement.

Dr. Robert H. Barnes, Richmond.
Dr. George Benjamin Carter, Purcellville.
Dr. Ashby Coleman, Jewell Valley.
Dr. Edgar Lee Crumpacker, Williamsburg.
Dr. Curtis Preston Gardner, Jr., Hillsville.
Dr. Hugh Johnson Hagan, Jr., Roanoke.
Dr. Claude Gibson Hooten, Lynchburg.
Dr. A. W. Lewis, Jr., Aylett.
Dr. George W. Melchoir, Richmond.
Dr. Frank F. Merker, Richmond.
Dr. Charles Thomas Nicholson, Jr., Alexandria.
Dr. Clyde G. O'Brien, Appomattox.
Dr. Algerd Powell, Buena Vista.
Dr. James W. Sinclair, Warrenton.
Dr. Warren Taylor Vaughan, Jr., Richmond.

Promotions in Service.

Promotions have been noted recently of the following Virginia doctors who are in Service:

To COLONEL—
Dr. Joseph E. Cox, Waynesboro.

To LIEUTENANT COLONEL—
Dr. George A. L. Kolmer, Salem.
Dr. M. H. Todd, Norfolk.

To MAJOR—
Dr. John Newton Dunn, Blackstone.
Dr. E. L. Hopewell, Strasburg.
Dr. R. C. Manson, Richmond.

To CAPTAIN—
Dr. William Minor Deyerle, Richmond.
Dr. A. M. Jacobson, Roanoke.

WOMAN'S AUXILIARY
to the
MEDICAL SOCIETY OF VIRGINIA

President—MRS. PAUL C. PEARSON, Aylett
President-Elect—MRS. P. M. CHICHESTER, Abingdon
Recording Secretary—MRS. C. C. SMITH, Norfolk
Corresponding Secretary—MRS. HAWES CAMPBELL, Turpin
Treasurer—MRS. REUBEN F. SIMMS, Richmond
Chairman, Press and Publicity—MRS. A. G. SHETTER, Richmond.

A Doctor's View of A "Unified Social Insurance System" of Medical Practice.*

Eric Johnston, the dynamic President of the United States Chamber of Commerce, recently published a book with the title America Unlimited. This book should be read by all who doubt whether America offers further opportunities for achievement or who dally with the idea that our democratic system of government suffers by comparison with any political philosophy yet devised.

I want to use a paragraph of this book as a text for what I shall have to say. For we can get a clearer idea of the merits or demerits of a socialized system of medicine—that is, medical practice controlled by the federal government,—if we can consider the project against its background and as a part of a general program rather than as an isolated, unrelated socio-political scheme.

Eric Johnston writes:

"The age-old struggle between Authority and Liberty seems to have come to a head. In country after country the principle of Authority has triumphed; in others, particularly in America, Liberty is still in the ascendant, though harassed and on the defensive as never before in our national career. Everywhere, it would seem, the answer is being sought to the riddle whether the people own the state or the state owns the people."

The context shows that Johnston uses the word Authority in the sense of power concentrated in a strong centralized, totalitarian government, and Liberty in the opposite sense of decentralized government; or as applied to our own country, a controlled economy from Washington as against free

*Address before the Woman's Club of Abingdon.

enterprise and individual initiative.

This cleavage of opinion is literally age-old in our country—as old as, or older than, the nation itself. As strange as it is, there were monarchists here even though the colonies had just thrown off the yoke of monarchy. At the opposite extreme there were those, even then, who hesitated to have their states join any union, fearing that any surrender of powers to the federal government would set up a superstate. Ever since, there have been Federalists and Republicans, as they were called then. Since the mountaineers of Pennsylvania challenged the right of federal government to tax its citizens for converting their gain into whiskey, the debate has gone on between those who would give more power to the central government and those who resist what they consider encroachments upon the rights of the states and of the people.

We have not time to cite specific instances. We can remind ourselves that the argument between advocates of federal and states' rights had become so bitter by 1861, and on matters so basic, that it brought on civil war. The War Between the States was fundamentally an argument over the right of the several states to order their own internal affairs, and when that right was denied them the southern states exercised their privilege of withdrawing from a partnership, the conditions of which had become intolerable. A bloody war of four years settled once for all any claim that states' rights had precedence over federal authority.

As time passed control centered at Washington extended more and more into the economic life of the nation. Theodore Roosevelt, you remember, contended that "big business" could not combine into trusts and monopolies, lest they grow powerful enough to challenge government itself. Parenthetically, one wonders whether, if Theodore Roosevelt were President today, he would wave an equally "big stick" over the labor unions—or is there no menace to government there?

Political philosophers are now extending their theories into the orbit of the individual. Their thesis is, Men are no longer able in this industrialized era to provide for the calamities of life, old age, unemployment, etc. Therefore, both employee and employer must turn over part of their earnings—enforced savings, say—that government may bring security which neither the individual, his relatives and friends, nor his local community can provide.

The next is an easy step. Not only are there underprivileged individuals, but there are backward states. Witness, they say, the sad condition of public school education in some states. Something must be done about it. So the education of children, too, must be subsidized—controlled by federal government.

And if old age, unemployment and illiteracy are the proper concerns of government, why should not provisions against the costs of sickness be included? Isn't health one of the necessities of the abundant life? Again parenthetically, food, clothing and shelter are even more immediate necessities of life, but no one has seriously advocated—at least not yet—that farmers and grocers, tailors and clothiers, landlords and realtors be corralled into some system of control, hired to feed, clothe and house any large fraction of the people.

At any rate, such is the reasoning behind the Dingell Bill introduced in the Congress January 3, 1945. This House Bill 395 replaces the Wagner-Murray-Dingell Bill pending in committee since June 3, 1943. It proposes to set up a "Unified National Social Insurance System". With the endorsement and active support of the Administration, of organized labor and of many other powerful groups, the chances of the passage of the bill seem good, to say the least, unless any opposition there may be becomes more general and better organized than appears to be the case at present.

In essence, this is a new and vast expansion of the present social security program. It is designed to embrace classes now exempt, for instance domestic employees, and to provide more complete coverage for all classes embraced within its terms. Particularly for our present discussion, it is proposed to set up a federal system of medical and hospitalization insurance benefits. This feature is Title IX of the bill, and it is with this title alone that we are dealing at this time.

This section may or may not be the most important section of the program. At least, it is a venture into a field of service with which physicians are most acquainted and about which we have felt, until now, that we were best qualified to counsel and advise. Not that the medical profession arrogates to itself all wisdom in matters of health, nor do we claim any inherent rights or vested interest. To the contrary, we admit that the very right of practice itself is a grant of privilege, and, there-

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fore, the grantor has the right to determine the conditions under which the right will be conferred, or may be modified or annulled. But, so much admitted, we confidently submit the assertion that we know more than any other group about the practicalities of the service of medicine, what is liable to be good practice or bad for the American people.

Furthermore, some of us are persuaded that for the majority of practicing physicians federalized medicine may be to our distinct advantage, financially or economically speaking. To be secure "from the cradle to the grave" of our professional careers might not be such a bad thing after all.

Believe us, then, when we say that in the opinion of the great majority of practicing physicians federal control of medicine and of the medical profession is distinctly un-American and, therefore, ill adapted to the genius and the needs of our people. For this reason alone we object.

It would burden this discussion to set out in detail the medical and hospitalization provisions of this bill. Suffice it to say that it is proposed to raise by increased taxes on pay rolls, on employers and the self-employed a trust fund conservatively estimated at 12 billion dollars annually. About 3 billion dollars of this fund is to be made available to the Surgeon General of the Public Health Service. With this fund he must hire physicians, both general and specialists, to provide medical care and medicine, in and out of hospitals, for from 80 to 95 per cent, as is variously estimated, of the American people. He must also provide hospital beds, and if in his opinion they are needed he may build new hospitals, clinics or health centers. So, presumably, he will have power to shift doctors or to build hospitals, thus to hold a whip over non-cooperating personnel or institutions of any community to bring them into line. He must determine standards for the various specialties, who shall qualify as specialists, and when the patient may consult the specialist. He may subsidize undergraduate and postgraduate professional study and research. And two years after the law goes into effect he and the Social Security Board must advise the Congress how dental, nursing and other services can be provided.

Now, then, what's wrong if, guaranteed by the United States Government, one can buy insurance against the costs of medical and hospital bills for one's self and dependents at a maximum personal cost of $45 to $52.50 annually?

When attempting to answer this question one is confronted with the undeniable fact that men think differently upon even the most fundamental principles. I am conscious of this handicap and that I view the question through a doctor's glasses. If, then, my view seems myopic or astigmatic, you are free to make such corrections as you think proper.

I object to this bill, first, because it is compulsory and almost universal in its application. If one is gainfully employed there is no escape from its tax provisions up to the first $3,000 of gross earnings, whether or not one expects to use its so-called "benefits". I think I have no right to force my neighbor into a scheme which he does not want, even though I believe it is a good thing for me and my dependents. I believe church membership is a good thing. I would not if I could force every one to join my church.

It sets up another huge bureau with all of the potentialities of government by bureaucratic decree and red tape. It puts a stake of 3 billion dollars into the hands of one man—a dictator over the health, if not the lives, of some 110 million free Americans. Think of the temptation to boondoggling and chiselling, if nothing worse, with and through this immense sum to be spent each year.

But in spite of these billions the real problem of the conscientious doctor is not touched. The unemployed, the unemployable, the pauper are not provided for in any way, except as some relief agency may possibly buy participation for its clients with other tax money.

Its cost—it is estimated that some 20 per cent of the fund will be needed for administrative purposes alone—an overhead of 600 million dollars—dollars enough to hire every active physician in the United States at $5,000 per annum. A costly venture, certainly, even if we could guarantee no waste and extravagance.

It smells from afar of politics in the ugliest sense of that term. If one needs to be reminded of how ugly this can be, a particularly flagrant case may be quoted from the words of a newspaper columnist: ". . . in February 1936, a WPA administrative assistant in West Virginia wrote to one of his county administrators: 'I hand you herewith a list of the doctors in Ohio County. Kindly separate Democrats from Republicans and list them in order of priority so that we may notify our safety foremen and com-

pensation men as to who is eligible to participate in case of injury.' " (Lawrence Sullivan, The Drive for Socialized Medicine, Nashville Banner). Accordingly, Democrats were listed in the left hand column, Republicans in the right!

From the moment the physician signs up under this law he may forget medicine. From then on his professional success and fortune are in the hands of the politician who appoints him and who promotes him. In turn, patients are limited in their choice of physicians to these panel doctors: that is, if they are to realize the "benefits" of their tax payments. Neither can they change doctors nor consult specialists except under the rules laid down for them.

The level and the spread of service for some of the people may be, probably will be, improved, but for most it must mean a levelling down from the present high standards, the highest in the world. The incentive to good work on the part of the doctor is gone. He can earn only so much—about the wages of a skilled mechanic. Why should he work or worry himself over the fate of his patient, so long as he is protected by his political boss, any more than the union laborer who is in the good graces of his labor boss. State medicine—political control of medical service—always has meant, always will mean, for the mass of the people medical care by physicians who are politically amenable and are so selected rather than for professional skill and ability. Or else the people will be served by physicians who prefer to be servants on wages—hired men—rather than to risk their fortunes in a competitive field in a free world.

In either event the medical profession will have been unionized, willy-nilly, and, of course, at the same time you would confer upon the profession all of the prerogatives of union men, including the right to strike. What a paradox! Just a few years ago the present administration prosecuted and won through the Supreme Court of the United States a suit against medical societies for operating, as it were, a "closed shop" in "restraint of trade". Now, the same administration would force us into a union of its own devising which we must join or else—

But we don't want such control. The rank and file of the medical profession of America is proud of its achievements and jealous of its part in our civilization. We are anxious to maintain our freedom of action. Ours is the only country on earth where the great company of physicians is—I was about to say free, but we are too much the servants of our patients and of our consciences to be free. At least, we are not the servants of government. Germany under Bismarck began her experiments in state medicine sixty or more years ago. It is one of the institutions of old Germany which Hitler approved of. He should have liked it: he stole all of the accumulated funds for his own purposes. Now, German doctors slave as and where they are ordered, with or without pay.

What gain there may be from a program of government controlled and administered medical care is obvious. Undoubtedly, there is room for improvement, especially in the distribution of services. Good and complete service is and always will be costly whether the individual or the government pays the bill. But this and other demerits and shortcomings of traditional practice can gradually be alleviated by the wide adoption of voluntary hospital insurance and of other plans now under intensive study and experimentation by both the medical profession, hospital associations and state agencies. For instance, a study of the problems of rural medical care in Virginia is now underway by a legislative committee composed of legislators, physicians, and other informed and interested individuals.

It is not so easy to show the menace of so-called state medicine, but it is there and is all the more sinister because it is hid under a cloak of humanitarianism. If medical care of the sick—that most intimate, personal, individualized and confidential of all services—is ever regimented under governmental decree and control, not only have we brought medical service down to a drab level, but we have taken the most decisive step possible to conceive of toward taking over, by the same process, all professions, all industry, all enterprise of every sort. And that will be socialism or some other form of totalitarianism.

A few weeks ago the New York Times addressed one of its leading editorials to the assertion by an Englishman that after this War world socialism is inevitable. In the course of his remarks, the editor makes this comment: ". . . It would be bitterly ironic if the unparalleled sacrifice of blood and treasure that the United Nations have made to defeat German National Socialism should result merely in the world's taking over substantially the same system. It would mean that in a moral, eco-

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nomic and political sense the vanquished had been in the end the victors. . . ."

This, then, is the issue shortly to be faced by the American Congress for and in behalf of our people. Granting if only for the sake of argument that the entire social program as enacted to date was designed to correct abuses growing out of our democratic system, and has been amply justified in its operation and effect, just how far shall we follow this course of national socialism? Where should we stop? Is it possible that we can pay too dearly for this unified or collectivist type of "security"? People can be pampered and spoiled by depending too much upon a Great White Father In Washington, just as do children who expect too much of Santa Claus. I remind you that never was a people more secure than the slaves of the southern planter. Never were people more insecure than the pioneers of Jamestown and Plymouth Rock, unless it were the founding fathers who rebelled against the mother country because they were too much governed from London. Independence won, they proceeded to establish this, "the land of the free and the home of the brave".

In parliamentary law some motions are ruled debatable, others non-debatable. Sometimes I wonder whether any question is solved satisfactorily to all parties concerned by argument. Man, like woman, convinced against his will is of the same opinion still. Just as our church connections or political affiliations may be accidents of birth, so our attitude toward social problems may depend upon which side of the tracks we were born or live on.

Even if we can eliminate prejudice in our consideration of the present problem of what is the best medical-service plan for the great mass of the people, the decision will be reached largely uninfluenced by argument. We feel about some things almost instinctively, deep down, and here we are conscious of a balancing of two conflicting emotions—a desire to be secure against the vicissitudes of life, yes, but not at too great a price, not at the sacrifice of freedom to choose our own paths within reasonable limits, even at some risk. Some of us sometimes prefer to bid and play our hands "on a hunch", regardless of precedents, orthodox procedure, and the risk. So the framers of the Constitution of our Republic "played a hunch" when, regardless of all old forms of government, they strictly limited by definition the authority of the central government, reserving to the states and to the people themselves all powers not specifically taken from them.

Some such thought must have been in the mind of Winston Churchill when he said—

"We must beware of trying to build a society in which nobody counts for anything except a politician or an official, a society where enterprise gains no reward, and thrift no privileges."

F. H. SMITH, M.D.,
Abingdon, Virginia.

BOOK ANNOUNCEMENTS

American Medical Practice in the Perspectives of a Century. By BERNHARD J. STERN, Ph.D., Lecturer in Sociology, Columbia University; Visiting Professor of Sociology, Yale University. New York. The Commonwealth Fund. 1945. ix-156 pages. Cloth. Price $1.50.

This is the first of a series of monographic studies published under the auspices of the New York Academy of Medicine's Committee on Medicine and the Changing Order. The author lectures on sociology at Columbia University and is a visiting professor of sociology at Yale University. The present monograph is an attempt to give in 139 pages the "story of the reciprocal interplay between social, technological, and economic forces and medicine." Dr. Stern begins with a description of the social and economic changes in American life since the early nineteenth century, and in successive chapters he paints the expanding horizons of medicine—the effects which the growth of machine production, industrial urbanization, and economic concentration have had on the health of the people. Side by side he undertakes to portray the progress of medicine as a science, the mounting costliness of its services, the colossus of medical education, the growth of specialization, the vastness of our modern hospital system as well as the unequal distribution of medical service.

Dr. Stern has managed to compress in a few pages an astonishing amount of material which should be of interest to every doctor as well as to the socially minded citizen. If the other monographs portray as well the framework for an understanding of our present medical problems, the New York Academy will have rendered to the citizens of this country an invaluable service.

W. B. B.

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A Plan for Hospitalization of Indigent Maternity and Infant Patients With Complications

THE organization of Maternal and Child Health Clinics for indigent maternity and infant cases was begun in Virginia in 1936 through the Bureau of Maternal and Child Health of the Virginia State Department of Health. In the next few years a considerable number of these clinics were established in those rural areas having county health departments. Local practicing physicians were the clinicians. The continued operation of these clinics focused attention upon an urgent need for some method to be put into force whereby indigent patients attending these clinics could be hospitalized when such procedure was considered imperative. Local funds for this purpose were found to be either lacking or entirely inadequate. The Director of the Bureau of Maternal and Child Health discussed this matter in detail with the Committee on Maternal Health of the Medical Society of Virginia and arrangements were made whereby an experimental hospitalization plan was put into effect in one rural county on November 1, 1941. The cost of the undertaking was financed by matched state and federal funds. Both the Maternal Health Committee and the State Department of Health felt it advisable to try this experiment in a limited area without undue publicity. Under this plan, hospitalization was made available to indigent mothers and babies referred from official maternal and child health clinics. Provision was made also to include emergency indigent maternity patients or infants that were referred by the family physician through the county health department. Hospitalization was provided solely for medical indications; not for social or economic reasons alone. Midwife cases requiring emergency hospitalization were screened through the clinics with the approval of the physician in charge.

This experimental plan proved so successful that the Maternal Health Committee recommended to the State Department of Health that an extension of the activity be

made in July 1942 to include all areas of the state served by official county health departments. Further expansion was made later to include all rural areas of the state. All areas of the state are now under this plan except the larger cities with independent health departments. Fifty-one hospitals are now participating. These hospitals are geographically situated so that all sections of the state are accessible. The hospitals are paid the actual cost of ward hospital service. No payment is provided for the physicians. This plan is entirely separate from and should not be confused with the federal Emergency Maternity and Infant Care Program for wives and infants of enlisted men.

The principles of this arrangement are simple and fundamentally sound. The plan offers a method to provide for those indigent patients unable to obtain necessary hospitalization. Some of these patients probably were previously a burden upon hospitals that furnished them care notwithstanding the financial loss. It is believed that a large percentage of patients cared for under this plan would not have received needed hospitalization because of lack of an *organized* plan to provide this service. It is reasonable to believe that the operation of this plan is favorably affecting maternal and infant mortality. A noteworthy feature has been the provision whereby the physician, with information relative to the patient and the family, has been able to voice his opinion of the eligibility of the patient for care at public expense. Physicians using this plan have not imposed upon it. On the contrary, it may well be stated that physicians referring these patients have used unusually sound judgment in their selection of cases. The development and efficient administration of this demonstration plan has reflected credit upon the Bureau of Maternal and Child Health of the State Department of Health. The performance of the physicians participating in the program has demonstrated the willingness of the medical profession to do its part for those whom they sincerely believe to be in need of and unable to pay for necessary hospitalization.

During the thirty months the plan has been in operation, 1621 patients have been hospitalized. Of these, 1027 were maternity patients; 594 were infants. All of these were patients urgently in need of hospitalization on account of serious complications. The total cost of hospitalization has not been excessive. Virginia is the only state, so far as is known, with a plan of this type in operation. Even though one-half of the entire cost has been through the use of federal funds there is considerable satisfaction in knowing that the plan originated within this state to meet our own problems. Further experience may indicate it to be a part of the answer for a more complete program for necessary hospitalization of indigents through public funds.

C. J. A.

A National Maternity Service for England and Wales

AT the request of the Royal College of Obstetricians and Gynecologists a committee of well known English obstetricians has brought in a forty-two-page report entitled *Report on a National Maternity Service.* This report is reviewed by Dr. Nicholson J. Eastman in the February number of *The American Journal of Obstetrics and Gynecology.* The first part of the report describes the present service and its shortcomings. The second part presents a nation-wide plan for conserving

what the committee considers the chief national asset, the babies and the mothers who produce them.

The present service has grown up in a haphazard manner and has resulted in an uneven system of distribution of both obstetric personnel and first rate maternity institutions and equipment. Although the maternal mortality has fallen from 4.49 per 1,000 live births in 1931-35 to 2.54 in 1942, the committee believes that this has been due to the application of new methods and drugs in the treatment of shock, hemorrhage and sepsis rather than to any improvement in the standard of obstetric practice. The more prevalent use of blood and plasma transfusion, the employment of sulphonamides, the prevention of droplet infection by the use of face masks, the control of infection by modern barrier nursing, and the lowering of infections in hospitals by bacteriologically controlled administration and discipline, are specifically mentioned. The great difference in maternal mortality rates in the various parts of England, is explained by the committee by the variation in the obstetric personnel and resources.

Likewise the frequency of stillbirths, neonatal deaths and premature births are found to be higher than they should be. The accommodations for the newborn, even in the newer maternity hospitals, are usually inadequate. While the problem of maternal and newborn infant care is essentially a medical one, the committee thinks that social and economic considerations play a part. As the social and economic order is descended from the higher ranks of business and professional men to unskilled laborers, the maternal mortality rates in any given age group show a definite rise. Adverse social and economic conditions materially reduce the chances of a child being born alive, or if born alive of surviving a month. The importance of a high standard of family life is urged in the belief that the infusing of higher moral and spiritual values into the families of a country has a profound bearing on physical and mental health. The committee pleads in particular for early marriage. Apart from the advantage of early marriage in relation to sexual morality and apart from its possible bearing on population problems, early marriage has a direct bearing on the health of mother and child. While the risks associated with childbirth at a later age can always be minimized by skilful care, nevertheless, over large groups, they do attain statistical significance.

The committee suggests dividing the country into areas of approximately a million population so that each area would yield about 15,000 births a year. In each area there would be a key or primary center, divisional or secondary centers and local or peripheral centers. The key center, whenever possible, would be connected with a medical school and its director would be the Professor of Obstetrics and Gynecology. He would have direction not only of the key center but of the whole area. Such a center would have 100 or more lying-in beds with an appropriate number of antenatal and isolation beds, a department for infants, ambulance and emergency services, antenatal and postnatal clinics, laboratories, classrooms and library. There would be an associated gynecological unit with provision for the treatment of abortions. The director should be provided with a house in the hospital precincts. With him would be associated a staff of specialists, assistants of various grades, house surgeons, midwives and nurses.

The divisional or secondary centers would be in large towns or in small towns in rural areas. Their equipment and staff would be like that of the key center. They would provide consultant services both obstetric and pediatric for general practitioners.

The local or peripheral centers would be small units in country towns and villages. They would be in charge of selected general practitioners in the district and would have a resident staff of nurse-midwives. They would have their own antenatal clinics, and would provide beds for women who wish to have institutional confinements, and for emergency cases for whom a more distant journey would be dangerous. They would be the centers for the district midwives and the public health nurses.

Delivery of women in their own homes is approved under three conditions: 1. They shall have had excellent prenatal care up to the very end of pregnancy. 2. All primiparae, all women who have had six or more children, all whose labors are likely to be abnormal, and all whose home conditions are unsuitable are excluded. 3. Home deliveries should be supported by obstetric consultants and maternity institutions. Every antenatal clinic should be linked to a maternity center with a sufficient number of antenatal beds. Midwives should not be regarded as competent to undertake unaided the antenatal care, but should always work in collaboration with the general practitioner or obstetrician of the clinic. It should be remembered that in Britain the midwife is a different sort of person from the midwife in Virginia. She has had a year's training in obstetrics if she is a graduate nurse, and two years' training if she is not a graduate nurse. She is present at 90 per cent of the confinements and in three-quarters of these she acts as an independent practitioner with full responsibility.

It is recommended that the whole service should act as a single unit, with all parts integrated—maternity centers, antenatal and other clinics, obstetricians, pediatricians, general practitioners, midwives, public health nurses, etc. It is assumed that the Minister of Health, together with competent advisors, would control such a maternity and infant health service and that it would be a part of the general health service of the country. A brand new idea in the service is the postnatal hostels. Here the mother and her new baby could go for a period of recuperation or rehabilitation. It would give her an opportunity to get used to her new worries and responsibilities, under guidance. Two or more weeks in a postnatal hostel would make all the difference to the health and happiness of mother and baby.

To one who has heard many of the committee talk when on visits to the United States, it seems strange to hear them recommending in such strong terms institutional obstetrics. The committee cites convincing statistics to the effect that modern institutional obstetrics can be made remarkably safe. During the war the Ministry of Health has brought about an increase of 3,000 maternity beds in England and Wales, so that now there is maternity accommodation in institutions for at least 50 per cent of the mothers. But the committee is firm in its belief that this is not enough. It recommends providing, to begin with, for 70 per cent of all births.

The plan is a very pretty one, on paper. It should work fine, but for one fact, and that is human nature, and human nature, especially obstetric human nature, is peculiar. Obstetric catastrophies have a way of happening when they are least expected. When they come, all the consultation service in the world is of no avail. A chain is no stronger than its weakest link, and this is a mighty long chain. In our opinion the chief value of the plan lies in its educational possibilities. From reviewing maternal deaths over a period of years, we have gained the impression that the commonest fault has been a lack of interest in obstetrics on the part of both the patient and the accoucheur.

William Henry Howell

1860-1945

THE death of Dr. William H. Howell on February 6th brought regrets to his many students scattered all over the world. Dr. Howell was the last survivor of the original Johns Hopkins medical faculty. Abel, Mall, Welch, Williams, Kelly, Halsted, Hurd, and Osler are all gone. We do not know that a medical school is needed in Heaven, but they certainly have a group of great teachers.

Dr. Howell was strictly a Baltimore product. He was born in Baltimore in 1860, received his A.B. at Hopkins in 1881 and his Ph.D. there in 1884. Except for three years when he was professor of physiology and histology at the University of Michigan and one year when he was associate professor of physiology at Harvard, he was connected with Johns Hopkins all his life. He was professor of physiology in the University before the Medical School was started and after that he taught in both the University and the Medical School. When the School of Hygiene and Public Health was started in 1917 he was assistant director and in 1926 he became director. He has been emeritus since 1931.

At one time, Dr. Howell was editor of the *American Journal of Physiology* and in 1920, he, with Dr. W. H. Welch, founded the *American Journal of Hygiene*. His investigations of the circulation, the origin of the red blood cells, of the coagulation of the blood and the origin of the blood platelets are well known. He also participated in the discovery of heparin. He was president of the thirteenth International Physiological Congress. In 1932-33 he was chairman of the medical section of the National Research Council, and was one of the first members to be named to the National Advisory Health Council. He was a member of the National Academy of Sciences, the American Philosophical Society, the Society for Experimental Biology and Medicine, and the American Physiological Society. He was an honorary member of the English Physiological Society.

When we went to Hopkins in 1900, after a year at the Medical College of Virginia, Dr. Howell was dean of the Medical School. The question of the advisability of entering the second year class came up. He was of the opinion that we could do all right in the advanced class, but referred us to Dr. Mall. Mall thought we should make a fresh start with the first year men. He sent us back to the dean with that recommendation, and so we went back and forth from the physiological building to the anatomical building all one afternoon. In the end Dr. Howell had his way, as he usually did. He was a great executive, but did not seem like one. He was never in a hurry and had unlimited patience. We never heard him raise his voice. Most of the time he had the kindliest little twinkle in his eyes suggesting that life was mildly amusing to him. His lectures and demonstrations before the class were the acme of perfection. Everything was perfectly timed. At just the right moment the anesthetized animal, all opened up to show what the professor was talking about, would be wheeled in by Percy Dawson or by Erlanger. Dr. Howell gave no directions that we could detect, but the animal did just what he said he would do whether it was acceleration or slowing of the heart, increased gastric motility, increased urinary output or what not. It was almost as if the animal were hypnotized by Dr. Howell's perfect diction and well modulated voice. He certainly hypnotized the students.

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Societies

The Wise County Medical Society

Held its annual banquet meeting on February 23 at Hotel Norton in Norton, with twenty-one of its twenty-nine members present. Peptic ulcer was the topic and Wyeth's movie on the subject was shown by special machine. Prepaid medical care was discussed at length and a committee was named to present recommendations for action at a called meeting of the Society in March.

Officers elected for the ensuing year are: President, Dr. C. L. Harshbarger, Norton; vice-presidents, Dr. J. D. Culbertson of Coeburn, Dr. R. W. Holley of Appalachia, and Dr. E. P. Cox of Norton; secretary-treasurer, Dr. Thos. J. Tudor of Norton. The Board of Censors is composed of Dr. C. L. Harshbarger, chairman, and Drs. S. H. Rivers and F. S. Givens.

Richmond Academy of Medicine.

The Section on the History of Medicine sponsored the meeting of the Academy on March 13, at which time Dr. M. Pierce Rucker gave an address on "Leaves from a Bibliotheca Obstetrica". Dr. Rucker has done considerable research in the Miller Library of the Academy, and has been invited at various times to speak to other groups of the interesting values of this library. Following the address, there was an informal reception in the Academy dining room. Wives of members were invited to this meeting.

The program on March 27 was presented by guests from the Bowman Gray School of Medicine, Winston-Salem, North Carolina. Dr. George T. Harrell, associate professor of preventive medicine, spoke on "A New Approach to Basic Supportive Therapy in Rocky Mountain Spotted Fever", and Dr. Robert P. Morehead, associate professor of pathology and director of the department, on "Intravenous Alimentation with Special Reference to the Amino-Acids".

Norfolk County Medical Society.

At the meeting of this Society on March 19, the following program was presented:

Principles of the Treatment of Syphilis—Harry Pariser, Surgeon (R),USPHS, V.D. Control Officer of Norfolk;

Rapid Treatment Methods in Venereal Diseases—Earl White, Surgeon, USPHS, Director Hampton Roads Medical Center;

Discussion of Venereal Disease Control—Julian L. Rawls, M.D., Norfolk.

Dr. Claiborne Willcox and Dr. Lockburn Scott are president and secretary, respectively, and Dr. Raymond Kimbrough was chairman for this meeting.

Roanoke Academy of Medicine.

At the March meeting, the following scientific program was presented: Recent Developments in the Surgical Treatment of Certain Gastro-Intestinal Disorders by Dr. Keith S. Grimson, Department of Surgery, Duke University; and Sterility by Dr. E. C. Hamblen, Department of Obstetrics, and Gynecology, Duke University.

Dr. L. D. Keyser is President of the Academy and Dr. D. S. Garner secretary.

News

Please Note!

We have been compelled to reduce the number of reading pages in this issue in order to comply with the government's restrictions with regard to the use of paper. We are endeavoring to secure a lighter weight paper with the hope of resuming the regular number of reading pages in the near future.

McGuire General Hospital to be Enlarged.

In accordance with the Surgeon General's new authorization for 2,565 beds, McGuire General, Richmond, will be the largest general hospital in the Virginia, Maryland, Pennsylvania area. It will no longer serve as an evacuation center but will render definitive treatment to all patients trans-

ferred to it from other evacuation hospitals, and will function as a neuro-surgery center, with some of its 2,565 beds available for neurology cases.

The expansion has necessitated the construction of 25 new buildings which will house the increased enlisted detachment. The old detachment barracks are being converted to wards, each building being of the same general design as the present single story hospital wards. The increased bed capacity requires the conversion of the first floors of all five (5) three-story buildings. In the past these areas were used for office space, lecture rooms, etc. Complete ward facilities for approximately three hundred (300) men will be installed in these premises.

News from the University of Virginia, Department of Medicine.

At the meeting of the University of Virginia Medical Society on Monday, February 12, a motion picture on loan from the Army Medical Museum as a restricted film was shown. The film showed activities of the Eighth Evacuation Hospital in Italy.

On Friday, March 9, the University of Virginia chapter of Alpha Omega Alpha had its initiation of new members. Colonel John B. Youmans, Director of the Nutrition Division of the Medical Corps of the United States Army, spoke on the subject "Principles Underlying the Early Diagnosis of Nutritional Deficiency Disease."

Dr. Vincent W. Archer, Professor of Roentgenology, spoke before the Forsythe County Medical Society in Winston-Salem, North Carolina, on Tuesday, March 13. His subject was "Lesions of Gastro-Intestinal Tract Other Than Cancer and Ulcer."

Prisoner of War.

Lt. Joshua P. Sutherland, MC., AUS., who was previously reported as "Missing" is a prisoner of war in Germany. He is a son of Dr. and Mrs. T. C. Sutherland of Haysi and is a graduate in medicine from the University of Virginia in March 1943.

Married.

Dr. Frank Wilson Gearing, Jr., Woodstock, and Miss Mary Elizabeth Coleman, Boykins, February 24. He is a graduate of the Medical College of Virginia in September 1944.

Dr. Benjamin Franklin Montague, Jr., Charleston, W. Va., and Miss Mary Louise Aylor, Chatham, March 3. He is a graduate in medicine from the University of Virginia, class of September 1944.

Another Meeting Postponed.

The American College of Chest Physicians announces the cancellation of its annual meeting which had been scheduled to be held in Philadelphia, June 16-19. However the Board of Regents will meet in Chicago in June to transact any business matters of the College.

Not Canceled.

The art contest sponsored by Mead Johnson & Company on the subject of "Courage and Devotion Beyond the Call of Duty" (on the part of physicians) has *not* been canceled or postponed.

The closing date remains May 27, 1946.

There will be no annual exhibit *this year* of the American Physicians Art Association, due to the cancellation of the American Medical Association meeting which had been scheduled to take place in Philadelphia, June 18-22, 1945.

For full details regarding the $34,000 prizes and the "Courage and Devotion" contest, write Dr. Francis H. Redewill, Secretary, A.P.A. Association, Flood Building, San Francisco, California, or Mead Johnson & Company, Evansville, Indiana.

Clothing Collection in April.

The active cooperation is asked of all Americans —men and women— in the National Clothing Collection during April. This drive is conducted in behalf of more than fifty voluntary war relief agencies and United Nations Relief and Rehabilitation Administration (UNRRA).

In Europe alone, 125,000,000 men, women and children are in desperate need of clothing, shoes and bedding. Every one is urged to contribute to this drive, by going through attics, closets and trunks and donating garments not in use. Such materials will help these stricken war sufferers to help themselves toward their own re-establishment and, in turn, help us in creating the peaceful world of the future.

Get ready for the drive!

Need Now Is for 16,000 Nurses.

The Army needs 16,000 additional nurses immediately in order to care adequately for wounded and sick American soldiers, according to Major General George F. Lull, Deputy Surgeon General.

With the flood of new patients from overseas, the authorized ceiling for the Corps was recently raised from 50,000 to 60,000. At present it numbers only

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44,000 and about 250 nurses a month are separated from the Army for various reasons. About 71 per cent are overseas, some having been in foreign theaters for several years. Incidentally, a more effective rotation plan for these overworked nurses will be possible when the full quota of 60,000 is reached.

Nestle's Milk Products, Inc.,

Announces that Dr. James T. Lowe has been appointed Director of Nutritional Research for the company, and will make his headquarters in New York City. He comes from the Wisconsin Alumni Research Foundation with which he has been associated for the past ten years in the capacity of technical counsel and special field representative. His research activities have related principally to the subject of nutrition and vitamin D, in which fields he has published a number of papers.

The Chest Clinic, Richmond Department Public Health,

Which operated at 411 North Eleventh Street, this city, until it was burnt out early in the year, is opening offices on April 3, at 308 North Twelfth Street. As the clinic is owned and operated by the city, its service is necessarily limited to the citizens of Richmond.

Dr. Charles Frederick Williams,

For many years superintendent of the State Hospital at Columbia, S. C., has retired from that position to become Director of Research of the Hospital. He is succeeded in the superintendency by Dr. Coyt Ham who has been for several years a member of the Medical Staff of the Hospital.

Exhibition of Advertising Art.

With paintings occupying four of the three hundred places set aside in the "human interest" group, at the 24th Annual Exhibition of Advertising Art, to be held in New York from April 10 to 29, inclusive, Wyeth Incorporated, of Philadelphia, has again scored heavily with the experts. Each of these paintings dramatically emphasizes the Wyeth message to consumers: "Save your doctor's time in wartime."

"But it's my last night, Dad—can't another doctor go?" is the G. I.'s appeal in one of this series, which, in addition to recognition by the Art Director's Club, has been chosen for inclusion in the hundred outstanding advertisements to receive Wartime Advertising Awards.

For Sale.

Laboratory rabbits. We can handle large or small orders and have a constant supply. Contact us for your needs. Bonnie Brae Rabbitry, Route 12, Richmond, Virginia. Dial 5-2421. (*Adv.*)

For Sale.

Rose Cold-Quartz Ultraviolet Lamp with oral attachment; also Rose short wave diathermy machine (portable). Both in perfect condition. Address: W. M. Bowman, Major, MC., 101 Liberty Street, Petersburg, Virginia. (*Adv.*)

Wanted.

Full-time position or attractive location desired by highly trained EENT diplomate. Experienced refractionist and audiometrist. Over military age. Excellent medical credentials. Address EENT, care the MONTHLY. (*Adv.*)

Obituaries

Dr. Joseph Frasia Jones,

Well-known Richmond physician, died March 11. He was born in Mecklenburg County in 1877 and graduated from the Medical College of Virginia in 1906. He was formerly assistant surgeon for the Seaboard Air Line Railway. Dr. Jones was a great lover of outdoor sports and was said to be one of the best horsemen in this section of Virginia, and was an active member of the Virginia Fox Hunter's Association. Dr. Jones had been a member of the Medical Society of Virginia for thirty-seven years. His wife and two children survive him.

Dr. George W. Young,

For more than thirty years a practicing physician at Pennington Gap, died there on March 2, aged seventy years. He studied medicine at the Hospital College of Medicine, Louisville, Ky., from which he graduated in 1898, and was for some years a member of the Medical Society of Virginia. Dr. Young is survived by a son and three daughters.